Medical Times

THE JOURNAL OF THE AMERICAN MEDICAL PROFESSION

INCLUDING LONG ISLAND MEDICAL JOURNAL · WESTERN MEDICAL TIMES

Vol. 64 JULY, 1936 No. 7

SINUS STRATEGY AND TACTICS — E. Rogers Nodine

OLD COMPLEXITIES IN INFANT FEEDING OUT OF ACCORD WITH MODERN METHODS — Paul L. Parrish

THE WHEN AND HOW OF GALLBLADDER SURGERY — Moses Behrend

RAPID THERAPEUTIC EFFECTS AND SIMULTANEOUS MINIMIZATION OF THE PUBLIC HEALTH RISK IN SYPHILIS — Herman Goodman

THE FACTORS OF STERILITY IN EACH SEX — Joseph H. Friedman

PRACTICAL POINTS ON SOME COMMON AFFECTIONS OF THE EXTERNAL AUDITORY CANAL — Samuel Zwerling

CLINICAL NOTES

William Francis McKenna, Philip Goldfader, Mark Fishberg

OTHER TOPICS

CONTINUED GROWTH OF THIS JOURNAL ● VICARIOUS SADISM. PSYCHOANALYST LOOKS AT COMMUNISM ● CONCERNING EDITORS. ENDOCRINES AND CANCER ● ECONOMICS ● IMPECCABLE CANINES. THE LOTTERY TICKET AS MEDICINE ● CLOSED SHOP—CLOSED STAFF. BELIEVE IT OR NOT ● MORTALITY OF INSURED WITH A HISTORY OF ULCER ● CULTURAL MEDICINE—OLD TRAILS ● MEDICAL BOOK NEWS.

ROMAINE PIERSON PUBLISHERS, INC.

AMERICAN PROFESSION[illegible] PHARMACIST · MEDICAL TIMES

NATIONAL HAY FEVER ANTIGENS

SUCCESSFUL TREATMENT OF HAY FEVER

depends on the diagnosis of the pollens responsible for allergic disturbances, a proper interpretation of the case history and use of the indicated Antigen in properly graduated doses. NATIONAL POLLEN TEST ANTIGENS are standardized in nitrogen units for determining, by the "scratch test," the pollens responsible for sensitization, grouped according to area and season of pollination. For treatment of Fall Hay Fever, due to Giant and Dwarf Rag Weeds, use

NATIONAL HAY FEVER ANTIGENS

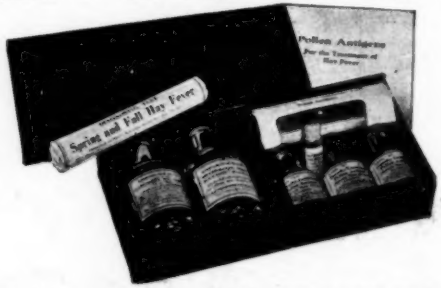
Rag Weed Antigen

for the Treatment of Fall Hay Fever

is standardized in nitrogen units, insuring uniform potency and accurate minimum bulk doses given according to the need of the individual patient. Fixed, or set, doses cannot give the selectivity of dose required.

Complete Treatment (24 doses) in Three 5 cc. Ampul-vials

V 209	Series "AA" 125 nitrogen units (8 doses)	Three 5 cc. Ampul-vials, $8.50
	Series "A" 250 nitrogen units (8 doses)	
	Series "B" 500 nitrogen units (8 doses)	



We offer the above special Rag Weed Antigen Outfit complete for diagnosis and treatment of Fall Hay Fever for $10.00. Contains two diagnostic tests for mixed grasses and giant and dwarf rag weeds; 1 ampul-vial each Series "AA", "A" and "B" Rag Weed Antigen; 25 cc. ampul-vial Sterile Physiologic Salt Solution for dilution of Antigen if needed; 25 cc. ampul-vial Epinephrin 1-1000 to control local or systemic reactions.

THE NATIONAL DRUG COMPANY
Philadelphia, U.S.A.

A COMPLETE BIOLOGIC SERVICE

Send me brochure on Hay Fever and Poison Ivy. MT 7-36

Dr. .....

Address .....

City ..... State .....

A COMPLETE BIOLOGIC SERVICE

Medical

Editorials

Continued Growth Of This Journal

The continued expansion of this publication has won for it a high place in point of circulation and influence. This fact is a source of satisfaction to its various sponsors and to all others who have been sincerely interested in its career. It establishes wide outlets for all its contributors and serves the profession at large, both here and abroad, as a medium of scientific and cultural expression. While it is an independent publication its affiliation with the best elements of organized medicine has strengthened its sense of professional trusteeship; therefore rigid scientific and ethical standards insure a high order of contributions and subscriptions. A good press is one of the essential elements of medicine and on this score this journal feels reason for pride. To all who are contributing in any way to its high objectives it is duly thankful and respectfully solicits continued support.

Such are the purposes and values of this publication, which now includes under its ægis and in its scope an addition to the LONG ISLAND MEDICAL JOURNAL, namely, the WESTERN MEDICAL TIMES.

Under the still more rapid expansion now to be expected, these three consolidated journals will enjoy large collective prestige, each contributing its store of kinetic energy to make a new organism whose powerful functioning in the world of medical journalism will reflect due credit upon the component parts.

●

A Psychoanalyst Looks At Communism

Men get started in life with the handicap of being larger babies and, in a way of speaking, having their faces stepped on at birth.

—Donald A. Laird, Ph. D.
(Colgate University)

W. R. D. Fairbairn, in a recent issue of the *British Journal of Medical Psychology*, subjects communism to an interesting psychoanalysis. Basically, communism sets itself against the family system. This sociological problem, like all others, is ultimately reducible to a matter of individual psychology. The attack of communism upon the family system represents psychologically a drastic attempt to deal with the triangular Oedipus conflict, an inheritance of childhood, by abolishing the Oedipus situation out of which this conflict arises. Be it remembered that the Oedipus situation is inherent in the family system, so the only hope of eradicating it in the individual mind lies in the destruction of the family as a social group. "The appeal of communism may, therefore, be regarded as in no small measure due to the fact that the achievement of its goal will remove the *raison d'être* of those taboos upon incest and patricide which maintain the Oedipus conflict in a state of repression in the unconscious, and which impose such extensive restrictions upon the individual libido."

When the libido emerges from its primitive narcissistic state, says Freud, the family is the group within which libidinal ties are first established. Out of the family grows the clan, out of the clan the tribe, and out of the tribe the nation. The idea back of the League of Nations is a family of nations. All this carries the bourgeois patriarchal idea. The bourgeoisie is essentially a stronghold of the family system. The fruits of capitalism itself are enjoyed by the members of the capitalist's family more than by the capitalist himself; they share his income and inherit his wealth. "In destroying capitalism, therefore, and in destroying the nation, communism is really striking a vital blow at the family system." These communistic motives operate both consciously and unconsciously and with all the force of a religion.

Highly nationalistic countries make an intensive cult of the family (e.g., Nazi Germany and Fascist Italy). Communism, on the other hand, aims to become supranational, transcending all national boundaries. It represents philosophically and economically a social system much more comprehensive than the nation and the beginning of a further phase of social evolution directed toward the emergence of a world State which shall supersede the nation as a social group, and to which each individual shall owe unreserved allegiance. "If this goal is attained, the individual libido, which was originally bound within

SERVICE
Address .....
City .....State .....
BIOLOGIC SERVICE

the family, and which later became extended by successive stages to the clan, the tribe and the nation, will eventually be weaned from its national loyalty and become invested in a world State embracing humanity at large."

The conflict in the unconscious of the individual having to do with the question of loyalty to the patriarchal father (involving the Oedipus conflict and a conflict arising out of the fact that intrafamilial and extrafamilial objects compete for the libido of the individual) represents the counterpart in such an individual of the sociological conflict between the family system and more comprehensive social organizations. We have here the nuclei of all the psychopathological symptoms under discussion, both as regards the individual and society as well.

But the family as a social group resists extinction. Like a Frankenstein, Lenin becomes emotionally a "benevolent father," literally worshipped in the place of the "malevolent father" who was the Czar. So in this manner has the family insinuated itself into the very texture of the peoples of the world, even the Russian people. It rests upon a profound biological basis.

"The Oedipus conflict will continue to play a significant part not only in influencing the psychological development of the individual but also in determining the nature of social institutions and defining the path of human culture."

●

Concerning Editors

We take pleasure in announcing acceptance of a Contributing Editorship by Dr. Arthur J. Schwenkenberg, of Dallas, Texas. Dr Schwenkenberg has risen to eminence in neuropsychiatry since graduation from the Neurological Institute as "one of its best trained men."

Dr. Charles H. Goodrich, in charge of Surgery in our Contemporary Progress department and long a leader in the State and County Medical Societies and in the Associated Physicians of Long Island, is now president-elect of the State Society. He merits the highest distinctions that the American profession can give.

●

The Lottery Ticket As Medicine

Gambling is acknowledged to be economically wrong and bad for the mind and character. It weakens the judgment by encouraging reliance on chance instead of on reason. It has been said that business, and even the conduct of life, is a gamble; but that is not quite so: speculation in business and in the conduct of life is, or should be, controlled by intelligent and constructive thinking. We find, however, in gambling what might be considered a favorable feature. This feature appears particularly in the case of lotteries. A person buys a lottery ticket. He holds the ticket for some time before the drawing is made. During that time he can think about it, he can indulge in pleasurable anticipations which distract his mind from disturbing preoccupations. In other words, the possession of a lottery ticket may be a factor in producing mental relaxation. And as the outcome of the lottery is understood to be always doubtful, no false feeling of confidence is created, the sudden destruction of which could produce an injurious shock. But while conceding to the lottery this therapeutic quality, such as it is, it does not follow that buying a lottery ticket should be prescribed indiscriminately as a mental remedy.

—E. E. C.

●

Vicarious Sadism

Most themes having to do with cruelty, as exhibited in the movies, are hackneyed and have lost much of their thrill. It has remained for some genius to exploit the screen possibilities of lynching, and now we have a picture which presents a "mass homicidal orgy" and completely satiates the zest for cruelty which seems to lie beneath the veneer worn by every civilized man.

To be sure, it may be argued that this zest for cruelty, being inherent and not wholly thwartable, might well be satiated vicariously, thus shunting the stark realities along compensatory emotional channels.

"There is one lynching in the nation every three days." Would the showing of the movie in question in every section of the country fan latent cruelty into action or act as a wholesome psychologic purge in the manner suggested?

About six thousand persons (twenty per cent white) have been lynched in this country during the past fifty years. It appears that in respect of our lynchings we are as well entertained as ever were the peoples of olden times.

An ironical element ever present in these lynchings is that the avenging mobs are

invariably composed of individuals exploited abominably under our social order and venting passionate resentments upon the handiest scapegoat, being stupidly unable to identify their real tormentors. This serves to explain why the putting down of lynching may not be regarded as an altogether desirable eventuality in certain quarters. It also suggests the real remedy for lynching, not movies acting possibly by way of partial reform and palliation, but social justice striking deeply and constructively at the roots of the evil thing.

●

Closed Shop— Closed Staff

The "closed shop" frequently suggests unpleasant things to the conservative doctor, conditioned to reaction, and yet he finds it difficult to function except at the hands of such union shops. He attends concerts at which the performers are unionized, he goes to theaters with much of their personnel organized, he eats in restaurants where the workers are similarly banded with other workers, his drinks are mixed by members of the bartenders' union, the newspapers that he reads are edited by a labor guild of writers, and he himself serves a hospital with a closed staff. Such a man ought not to stand in need of the teaching of the late Dr. John J. A. O'Reilly, who once declared that "The professions must protect themselves even if it be necessary to organize along labor union lines. A member of a labor union is not an enemy of society, he is a man who is observing the first law of nature, self-preservation. Even the doctors, dentists and druggists may so organize and still be true to their Hippocratic oath and to themselves and to the public."

●

Believe It Or Not

In a review of the biography of Dr. Russell A. Hibbs, published in our May MEDICAL BOOK NEWS, we were struck by the following remarks:

> The growth of the institution [New York Orthopedic Hospital] was due to his genius for organization. He early recognized that to develop a good service, the entire medical staff must devote considerable time to their work in the hospital, and this could not be possible unless they were free from economic worry. He, therefore, effected plans whereby each member of the staff received an adequate salary for the charity work done.

Which leaves one wondering to what degree present deficiencies are attributable to the situation in which so many other staffs now find themselves with respect to free service.

Is this situation a crazy and immoral one?

●

Impeccable Canines

A recent report of the New York State Health Department showed an increase in the prevalence of rabies. As the birth rate falls the adoption of dogs increases in response to certain human emotional requirements. Of course, none of these dogs is vicious or aggressive and merely to be bitten by such a pet without resultant rabies is nothing to make an issue of; why resent a bite without rabic consequences? This whole question has been befogged by constant prating about rabies, after all a rare sequel of a bite. Nor is any particular dog ever guilty of habitual sidewalk soiling.

Such is the psychology of the fond owners.

●

Mortality of Insured Persons With A History of Peptic Ulcer

Dublin presents the results of a study of the mortality among different classes of individuals giving a history of peptic ulcer but accepted for insurance during the years 1912 to 1932. The cases studied numbered 3,135.

The great majority of the cases were males. The cases which were operated numbered 1,905, while those treated medically numbered 1,230.

Some of Dublin's conclusions are of great interest. The surgical mortality was lower in those over 40 years of age than in the younger group. Surgical ulcer cases in which simultaneous appendectomy was performed had a relatively low mortality. In surgical cases with a pre-operative history of perforation or hemorrhage the mortality was higher than that recorded in uncomplicated cases. The mortality of surgical cases of duodenal ulcer was slightly lower than that for gastric ulcer. In medically treated peptic ulcer cases the mortality was appreciably lower than that recorded for surgical cases. Underweights with a history of peptic ulcer had a higher mortality than those of heavier build; this was consistent for surgical and medically treated cases. Deaths from recurrent ulcer and gastric cancer were extremely frequent. The death rate from other digestive tract conditions

and from coronary disease and angina pectoris was also high.

Not the least important of the foregoing conclusions is the one having to do with nutrition. The fact that an individual with a history of ulcer has been able to gain or maintain his weight is a favorable sign.

●

RUPTURE OF URINARY BLADDER ASSOCIATED WITH PROSTATIC HYPERTROPHY

According to A. J. SCHOLL, Los Angeles (*Journal A. M. A.*, Feb. 29, 1936), the factors usually associated in producing rupture of the bladder are distention, a variable type of trauma, and not infrequently an associated mental or alcoholic incompetence. Cases of bladder rupture are divided into two groups, depending on whether the rupture occurs intraperitoneally or extraperitoneally. In a small group of cases, rupture occurs without external violence, usually following distention caused by obstruction to the urinary outflow; in most of these cases there is also an associated disease of the bladder wall. In a number of cases rupture occurs directly as a result of some disease of the bladder wall which weakened it. In some cases rupture, while not caused by external trauma or violence, is nevertheless the result of influences outside the bladder itself and is not in the true sense a spontaneous occurrence. Such may occasionally follow diagnostic and therapeutic procedures on the bladder.

Occasionally a case is described in which rupture seems to be the result of mechanical obstruction alone. Cases in which rupture of the bladder occurs in association with prostatic hypertrophy are very rare. Patients with traumatic bladder rupture generally have severe pain in the lower part of the abdomen at the time of injury. This pain is continuous and is associated with vesical tenesmus, and usually the patient is in moderate shock. The symptoms in cases of spontaneous rupture differ very little from those in which rupture is caused by trauma. Spontaneous rupture is more likely to occur in elderly individuals with a history of prolonged bladder trouble. Generally in cases of rupture there is a strong desire but inability to urinate, or only a few drops of blood may pass. In some cases voiding may be quite free, the urine being blood tinged. If the rupture is extraperitoneal there is usually pain and swelling in the suprapubic area, and there may be signs of extravasation such as brawny edema or pitting of the tissues. The patient becomes septic and at times has chills and fever. Intraperitoneal ruptures, which are the more common type, are more serious and at times quite difficult to recognize. Symptoms of peritonitis, such as abdominal tenderness and muscular rigidity, appear early, and later vomiting and obstipation. On the other hand, a number of cases of intraperitoneal rupture have been reported in which the abdominal cavity was filled with urine for several days without signs of peritonitis. The catheter test and the injection test are still used quite as a routine and at times may be of value. Cystoscopy in some cases is of little value on acount of inability to distend and fill the bladder with fluid; or visualization may be decreased by extensive bleeding. Cystography, following the simple injection of a medium opaque to x-rays, will usually give definite and accurate information as to the condition present. Roentgenography, following the injection of air after removal of most of the opaque medium from the bladder, gives a good contrast picture, usually indicating the condition of the bladder, the location and, at times, the extent of the lesion present. The treatment in both the intraperitoneal and the extraperitoneal types of rupture is usually imemdiate operation. In the extraperitoneal type of rupture the main procedure is bladder drainage, together with drainage of any perivesical pockets or areas of extravasation. Usually individuals with rupture of the bladder are in poor general condition, and rapid, accurate operation is necessary, only what is absolutely essential at that time being done. The mortality, even of uncomplicated rupture of the bladder, always has been and still is very high. Complications and coincidental injuries in the traumatic cases greatly increase the severity of the condition.

●

IRRADIATED ERGOSTEROL

T. H. RIDER, GEORGE SPERTI, G. PARK GOODE and H. G. CASSIDY, Cincinnati (*Journal A. M. A.*, Feb. 8, 1936), declare that material collected from the literature shows that the clinical potencies of irradiated ergosterols are not as great as would be expected from comparative rat assays of these products and of cod liver oil.

SOME GENERAL CONSIDERATIONS OF THE SINUS PROBLEM

E. ROGERS NODINE, A.B., M.D., Freeport, N. Y.

WHEN we approach the sinus patient it is to consider his problem from a general as well as from a specifically local point of view. The careful history is, of course, the initial time-proven step to the successful handling of the problem. In taking this it is wise to have in mind the background of the patient with respect to the definite factors which have a great bearing on the successful care and treatment of any acute or chronic condition.

Three factors which are outstandingly important are:

1—The chemistry or diet of the patient.

2—The endocrinology.

3—Allergy.

Unless these factors are definitely taken into consideration the important elements of the appropriate treatment may be overlooked. Let us first take into consideration the chemistry or diet of the patient. When we examine a nostril which shows a very red, engorged, and thickened mucous membrane, we should immediately think in terms of the acid-base equilibrium.

D. C. Jarvis (*Laryngoscope*, 43:42, January, 1933) states that from his clinical observations of fourteen years, he has found that the color of the nasal septum and the nature of the nasal discharge indicate whether the patient has a tendency to acidosis or alkalosis. The red septum, which the author discusses especially in this article, is an indication that the individual takes an excess of acid-ash producing foods in the diet (or has a low tolerance for them) and has a tendency to acidosis. There may or may not be an associated nasal discharge; if present it is usually due "to a crossing of the line of tolerance for acid-ash producing starches." It has a characteristic yellow tinge. If the septum is a crimson red, the patients usually show a definite syndrome of fatigue, most marked in the morning, irritability, dryness of the skin and lack of resistance to infection. In the treatment of these cases, patients are directed to use a preponderance of alkali-ash producing foods, to take lemonade without sugar three times a day for three days, and bicarbonate of soda three times a day for one day, in rotation for a month, then the lemonade indefinitely; cod-liver oil is given two or three times a day until the redness of the septum subsides and morning fatigue disappears, then in diminishing doses. I. Frank (*Laryngoscope*, 43:48, January, 1933) has been able to confirm the findings of Jarvis in regard to the significance of the appearance of the nasal septum. He has found the pale septum more frequent than the red septum in his clinical experience. This he considers to be due to the fact that individuals with this type of septum have an annoying nasal discharge more frequently than those with the red septum. The pale septum is associated with allergic manifestations, not only nasal allergic symptoms, but urticaria, edema, arthritis, spastic colon and spastic ureter. These cases are best treated by changing the diet so as to include a preponderance of acid-ash producing foods, and by the administration of nitrohydrochloric acid as recommended by Jarvis. A solution of 5 drams dilute nitrohydrochloric acid in water sufficient to make 4 oz. is prepared and a teaspoonful in a glass of water given after each meal and at bedtime.

We must also take carefully into account in these cases questions as to the protein, mineral and vitamin intake. Thus Weston, writing in the *Laryngoscope* (44:948-958, Dec., '34), declares that "spinach is such an extraordinarily valuable source of the mineral elements and vitamins as to deserve special attention. I know of no better means by which the blood may be maintained in a faintly alkaline condition than through regular feedings of this substance." It is, of course, also a regenerator of hemoglobin. Ray M. Moose, writing in the *Arch. Otolaryng.* (21:64-70, Jan., '35), discusses the effects of deficiency of protein, calcium and vitamins C and D. The Transactions of the Fortieth Annual Meeting of the American Laryngological, Rhinological and Otological Society for 1934 and Bridges' book "Dietetics for the Clinician" (page 423) furnish interesting discussions. Nor must it be forgotten that we have in insulin a potent resource in severe cases, marked

by great difficulty in the handling of carbohydrates.

THE ENDOCRINE ANGLE

In considering the endocrinology problem, we are greatly aided by the physical examination and the history as to whether a particular patient is in all probability a thyroid or pituitary type of unbalanced mechanism. If any deficiency is found, an appropriate form of treatment along these lines should be instituted together with the local treatment of the sinus condition. The question of allergy can be determined by the history and special examinations which I shall mention below, and, if found positive, attention should be given to the etiological factors.

BACTERIAL TYPES

If on further examination of the nostrils pus appears in any one of the meati, a method of quickly identifying its type is as follows: I take a smear of this pus on a cotton applicator, transfer it to a glass slide and, using the ordinary differential blood count stain, a general conception of the type of infection with which we are dealing can be determined microscopically. If it is an acute infection, there will be a predominance of neutrophils in the field. If it is a chronic infection, there will be a predominance of small mononuclear lymphocytes. On the other hand, if we are dealing with an allergy problem, the field under examination will show a predominance of eosinophils and large histocytes. This comparatively quick method, which takes only a few moments, will immediately give us an idea as to what type of discharge we are dealing with.

THE CYTOLOGICAL WASH

Another method of accurate diagnosis which can be performed microscopically is one known as the cytological wash of the sinus. This is performed by attaching a small syringe to any apropriate sinus cannula and aspirating the matter contained in the sinus; that is to say, by aspirating or washing out matter which may be purulent, nonpurulent, or mucoidlim content. When we subject these washings to microscopic examination, we naturally find cells characteristic of the extent of degeneration of the sinus membrane. For the sake of convenience I have classified the chronic degenerations of the sinus membrane as follows:

(a) Hyperplastic
(b) Hypertrophic
    1) Edematous
    2) Glandular
(c) Degenerative
    1) Fibrous
    2) Cystic
    3) Infiltrative
(d) Mixed
    1) Combinations of the above

The cytological wash from types A and B shows a preponderence of small lymphocytes, some ciliated epithelial cells, plasma cells, and a few polymorphonuclear leukocytes on the slide. In the case of C and D, the slide will reveal a majority of stratified ephithelial cells, fibrous tissue cells, and round cells.

The important point to be brought out is that the hyperplastic and hypertrophic cases will often respond to conservative, nonoperative treatment, while no amount of so-called nasal laundering will take care of the degenerative and mixed types. These latter cases are the unrecuperatory type which must be subjected to a radical antrum operation, or a Mosher operation in the case of frontal-ethmoid syndromes.

THE ROENTGEN PICTURE

The x-ray is a valuable aid to diagnosis in connection with the above findings. It reveals the condition of the membranous lining, whether or not it is thickened, or pus is present; also the size of the sinus can be ascertained. In cystic conditions there is a diminished density of the bone, and the Roentgen ray will also detect mucoceles, partitions, tumors, or rarefying osteitis of the bony wall of the sinus. In recent years the injection of lipiodol into the sinuses has provided a means of determining their contours. Polyps are very well visualized by this method and the activity of the mucous membranes may be determined by the emptying-time method in a manner similar to that used by gastro-enterologists. In other words, the antra or frontals are filled with lipiodol, x-rayed and re-x-rayed in 48 hours. If there is any ciliary activity, the lipiodol will be washed out of the sinus. If not, the lipiodol remains. This in itself gives us some very valuable information as to the general condition of the lining membranes.

●

A good observer, who takes all findings as a whole, will be able to evaluate the evidence correctly, which leads to the decision whether a case will recover under conservative or operative treatment.

102 North Grove Street.

A PRESENT-DAY CONCEPTION OF INFANT FEEDING

PAUL L. PARRISH, M.D., F.A.C.P., Brooklyn, N. Y.

FOR a long time I have been interested in the subject of infant feeding and have watched the fashions come and go for many years. Thirty years ago, few in the profession knew anything of infant feeding. Perhaps the general men were frightened off by the usual complexity of formulae, many demanding some mathematical skill and all requiring painstaking care in the making.

The aim of the pediatrists at that time was to effect as nearly as was possible an artificial mother's milk. When we remember that neither the composition of mother's milk nor cow's milk was well understood, it is easy to see how difficult the task was. In addition, little or nothing was known of the conditions which are now thought so important: water balance, salt metabolism, necessity of protein in definite amount, acidosis, alkalosis, etc. Vitamins were undreamed of.

About all that was known was that babies who were fortunate enough to have good maternal nursing seldom died of nutritional disorders, and that of those not fed in this manner, many perished. It was not known why the artificially fed died. It was known that many perished following infections which were not fatal to nurslings, and that, beginning in July each year, the mortality rate went up, reaching its peak in mid-September due to the diarrheal diseases.

Some of us can remember a few of the things that contributed to the high mortality, such as the old fashioned nursing bottle—impossible to keep clean, the scarcity of good ice boxes, the lack of knowledge that milk must be kept cold to avoid deterioration, loose milk sold by the grocer from the frequently opened can under the counter, and the universal presence of the house fly.

Almost all these conditions gradually improved. The modern easily cleaned nursing bottle and nipple became universal, and the filthy teething tit or chewing rings were dispensed with. Some readers may have seen a grandmother put one of these things in her own far from clean mouth before giving it to the baby. Refrigeration became common; flies were kept off the child and its food by proper screens; and as the horse disappeared the flies disappeared with him.

Still the infant mortality in the summer months remained high, and thousands were signed out as chronic gastro-enteritis and marasmus.

Perhaps the foremost pioneer in this country in intelligent infant feeding and care was Abraham Jacobi. He claimed that the casein of cow's milk was at fault, and that by diluting the milk with a cereal decoction the curds could be made smaller and more digestible. This fact, the change caused by cereal decoctions, is as true now as then but the use of this method has largely gone out of fashion, and casein is rarely thought of as a cause of indigestion.

The publication in 1897 of the great book by Dr. Holt on "Diseases of Infants," probably the best book ever written on the subject, stimulated general new interest. He well appreciated the advantage of mother's milk as the ideal infant food, and he was well aware of the fact that milk should be clean, that cleanliness in the preparation of formulae was necessary, and that milk must be kept cold to prevent the multiplication of bacteria. He seemed under the domination of the idea that formulae must be made to conform to the nearest possible imitation of mother's milk, and many of his formulae were extremely complicated. Probably the willingness of the men in general practice to turn over to the pediatrist the feeding of infants was due to the difficulty of comprehension of his formulae, thus helping to set up a new specialty.

●

About 30 years ago, the first great advance in infant feeding occurred: a group of wise physicians conceived the idea that it would be possible to give the city infant the same chance as the country infant to have pure food. Among these men were Dr. Coit of Newark, Dr. Holt and Dr. Elias

Bartley of Brooklyn.

Working with the milk dealers, they decided to provide a pure milk for city dwellers, and, knowing that the causes of milk deterioration as a food began on the farm, arranged a scheme whereby this milk should be produced by healthy cows kept in clean barns, handled by clean people, iced quickly, kept cold by refrigerator cars, not handled more than necessary to bottle in sterile containers, delivered to the consumer in the original package, and chilled until delivered. Thus was gained the proper food for the city child. At present it is not at all rare for sterile milk to be delivered to the consumer. This great step stimulated the production of clean milk, so that all milk now delivered to the consumer is safe. The grocery milk, unfit for anything but cooking, was finally ruled out of the city only a year or so ago.

In my opinion, this is the greatest advance ever made in artificial infant feeding. It has greatly diminished the high summer infant mortality with which we older men were familiar. Of course, along with this aroused interest went the education of the public by physicians and nurses as to the need of the care of the milk in the home and the need of ice and clean utensils.

However, this did not by any means settle the feeding question. Many infants still died of nutritional disorders. It was thought that there was great virtue in raw milk and that the only safe raw milk was certified milk. It was thought that boiling or even pasteurizing the milk in some way diminished its nutritive value and also made it constipating, this despite the fact that in many European countries the milk was boiled and the infants fed in this manner did well. It is true that pasteurized milk loses some of its antiscorbutic vitamin but the antiscorbutic value was never high even in raw milk. In recent years the feeling in regard to boiling milk is that it is harmless, makes the milk safe, and does away with the danger of tuberculous, streptococcic, and other infections. This is another great forward step.

●

Some years ago, evaporated milk, with the addition of lactic acid and karo, became the fashionable method of feeding Evaporated milk has many advantages in that it is manufactured near the large producing areas of fresh milk; it is subjected to heat in a vacuum and condensed so that it represents roughly twice the normal strength of cow's milk. It remains sterile until the can is opened and is more easily digested than raw cow's milk. It is very widely used, and the buffering action of the added acid is rarely needed and any kind of sugar may be added.

Since early in my experience there have been canned milks or combinations of milk, cereal, and sugars in cans on the market. They still persist but as the underlying principles of infant feeding became known the older ones have passed on. At present we have Dryco, Klim, S.M.A., Similac, and many others, all useful and quite successful in use, provided one understands the underlying needs of feeding.

●

Many years ago, the Germans developed the theory that most of the acute and chronic diarrheas and cases of wasting were due to an excess of or to improper sugars. The Eiweiss milk of Finkelstein was widely used. As the reader knows, this is a food weak in fat and sugar and one and a half times as strong in casein as normal milk. It is still widely used in the diarrheas and cases of wasting where ordinary milk is not tolerated. Many years ago, high fat feeding was widely used in the form of cream mixtures which were low in casein, and these children did well but many developed acid intoxication. Years ago, a very favored method of some pediatricians was the so-called split protein mixtures. These were made by first taking out the casein by the use of rennet, leaving whey, and, with this, fat in various proportions was used. It has gone the way of the other fads or methods founded on part truths.

Fifteen or twenty years ago much was said about calories, and it was felt that children must be fed on certain numbers of calories to thrive. This is, of course, true, but the calories must be in useable form. One should know the caloric content of all formulae, and where there is any question it should be estimated; however, for generations the children have had empirically sufficient calories. The present conception is that a normal infant needs 40-50 calories per pound per day. This had for generations been followed in that it was long known that the infant needed two ounces of milk or its equivalent per pound per day to thrive.

Very gradually it has been borne into our consciousness, because of the experience and study during the past thirty years, that there are certain fundamentals in infant feeding which, when understood, go far to

make the subject intelligible to any who wish to give it thought:

1. To thrive, the child needs sufficient assimilable food for nutrition and growth; about the equivalent of 2 oz. of milk per pound per day.

2. It needs sufficient water: about 3 oz. per day per pound.

3. It must have, to thrive, a minimum requirement of protein for tissue building: roughly 1½ gm. per pound per day or about the amount found in 2 oz. of milk per pound per day. Almost any of the other parts of milk except protein can be varied at will, but if this is not supplied the child will not thrive.

The child also needs various minerals and salts, such as sodium chloride, lime, potash, phosphorus, iron, and possibly sulphur. These, fortunately, are usually sufficient in the common diets.

Also, in recent years it has been determined that certain diseases of formerly unknown origin are deficiency diseases. Rickets and scurvy are the two important ones we have to deal with. We all know they are now rare as compared to former times. I have records of the examination of over five hundred children made twenty years ago, showing sixty percent with some degree of rickets. We are now ashamed to have rickets in any child we have handled, as it is easily prevented. Vitamin D, common in fish liver oils, and viosterol, its concentrated form, plus sunlight and a sufficient amount of fat in the diet, prevent the condition, and cure it when found.

Scurvy was formerly not uncommon. Vitamin C, the antiscorbutic vitamin, is of course supplied by orange juice or other citrus fruit juices and does away with any possible bad effect of cooking the milk.

Beriberi and pellagra are very rare among our infants fed in any normal manner.

A summarization, then, of the modern conception of feeding the normal child may be stated as follows:

Mother's milk is the ideal food for at least the first six months, but as few mothers are able or willing to provide this, the present day simple milk modifications take the place of the natural source of supply quite satisfactorily.

In replacement of mother's milk a few fundamental facts must of necessity be known:

1. There must be sufficient food, clean food, and cleanliness in the preparation of formulae. Milk must be kept cold until used.

2. The amount: 40-50 calories per pound per day or roughly 2 oz. of milk per day or its equivalent.

3. Protein: about 1½ gm. per pound per day or about the amount found in 2 oz. of milk. However, some recent feeding experiments with condensed milk formulae plus vitamins C and D in large amounts throw some doubt on this statement.

4. Water: about 3 oz. per pound per day; this is, of course, mostly given as milk.

5. The salts and minerals are ordinarily present in sufficient amounts in the food, except iron, of which there is usually enough in the infant's liver (with the exception of the livers of premature infants) to tide it over until it gets the mineral in the vegetables, etc., added after the first few months.

6. Vitamin, C and D, which will respectively prevent scurvy and rickets, should be present in the diet.

7. Certified milk, which for added safety may be boiled, or evaporated milk, which is roughly about twice the strength of fluid milk and has the added advantage of being more easily handled, may be used.

Dry milks, such as Dryco, Klim, S. M. A. and many others which are made into formulae as directed by the physician may be used also.

●

Given a normal child of healthy parents: if the mother is unable to nurse it, its needs are met by any simple formula made up on the foregoing principles, taking into account that for the first few days its powers of digestion are weak; it may well be that the formula may not be made sustaining until the end of a week or so. Such a formula at the beginning would be, say for an 8 pound baby, boiled milk 10 ounces, boiled water 10 ounces, sugar 1 ounce; or evaporated milk 5 ounces, water 15 ounces, sugar 1 ounce; or Dryco 10 flat tablespoonfuls in 21 ounces of water. The child may be offered 2 or 2½ ounces at a feeding and will usually take what it wants. The amount can be gradually increased until at the end of a week or ten days the feeding is sustaining. Formerly, we believed that the infant's stomach held only about an ounce and that no more should be given; also, that the intervals between feedings should be equal. We know now that the child on the breast seldom takes similar amounts each time, and also that he usually takes many feedings of surprising size.

Granted that what I have said is so, then what are we to do when the baby does not do well? Search for the cause. Be sure your technique of food preparation is sound, then look for outside causes.

In the new-born, frequent causes are general debility of the infant due to disease or toxemia in the mother, head injuries interfering with sucking ability, and deformities of the mouth or digestive tract. Failure to keep up the temperature of the newborn is not infrequent, and this, especially in the prematures, may be fatal.

It may be several days before the child is able to take a sustaining formula, and in such cases it may be necessary to relieve the dehydration by the use of saline, intravenously or subcutaneously. We usually add 5 per cent glucose to this but the added food value is small. The parenteral use of fluid often serves to start the kidneys functioning and relieves symptoms of dehydration.

By the time the child is a week or so old the loss of weight should begin to be made up. The child should have one to three normal yellow stools daily.

In cases where vomiting is an annoying symptom after the first, second, or third week, it is important to rule out hypertrophic pyloric stenosis, especially when the vomitus is large in amount, involving more than the amount taken at one feeding, or when it is projectile. Its signs are well known; projectile vomiting, peristaltic wave of the stomach, constipation, occasional tumor, loss of weight.

It is safe to experiment for a few days with considerable doses of atropine plus lavage, if the loss of weight is not too great. Once the diagnosis is made surgery should be invoked as soon as possible. The Ramstedt operation through a small incision, quickly done, gives wonderful results.

The treatment afterwards should be left to the pediatrist, and consists essentially of introducing food an hour or so after operation, and of getting the child back to normal diet as soon as possible. Maternal milk is preferable. Evaporated milk formulae or boiled milk formulae may be used. Another less spectacular but more common cause of vomiting in small infants is the too tight binder.

In a child which is fed normally and gives no symptoms of indigestion, but after a few weeks ceases to gain, a search should be made for inherited syphilis. All know the common signs. The important thing is to remember that it does occur even in the best of families and without any clinical manifestation. There is considerable controversy as to the wisdom of giving the syphilitic children active treatment. In my experience, they usually need a moderately thorough treatment over a long period for success in rearing.

After the first few months, perhaps the two most important features to be ruled out are scurvy and rickets. It is not enough to know that a child has had sufficient C. L. O. or orange juice, but to know also that he has kept it down. We sometimes, to our surprise, find one or the other of these conditions present and elicit the history that while both have been given, they have usually been vomited.

Tuberculosis must be ruled out because, if present and undetected, it will cause anemia and failure to gain. If recognized early when only the tracheobronchial gland involvement is present, it is quite curable by means of forced feeding, sun and air and the use of iron and calcium. The x-ray is our most valuable diagnostic resource. These children will often, under proper surroundings, assimilate an astonishing amount of food, and the tuberculous lesions will calcify. Of course, we all now stress contact infection in the infant instead of the old idea of milk-borne infections.

Celiac disease is a somewhat uncommon (but probably more common than suspected) disease, in which there is, along with wasting and much abdominal distention, a lack in the ability to utilize fat, combined with a change in sugar tolerance, and associated with great fat loss in the usual large and frequent fatty stool. The relief of this is a matter of special feeding, utilizing the possibility of absorption of particular sugars.

●

We now come to perhaps the most important reason why the child fails to gain on perfectly proper formulae, which is acute, or subacute, or chronic infection of the upper respiratory tract, not infrequently associated with pyelonephritis. Such conditions are not common in private practice, but in hospitalized children make up a very important part of our failures.

A child entering the hospital for some minor or major complaint is placed in a cot and stays there, except when changed at the convenience of the charge nurse. It receives no handling; it is rarely removed from its crib; it rarely receives any fresh

air or sunshine. Soon it catches an acute cold from a neighboring child, either by direct spray contact or from the unwashed hands of the nurse or doctor passing from child to child. It retains its recumbent position on its back, with no handling or change in position, and soon there is an ear infection through the tube. As the child acquires these troubles its weight drops, and as the conditions are relieved, if its resistance is high enough, it again begins to gain. Suddenly, often with an active fever, diarrhea, and vomiting (but not always), it shows a great loss of weight, perhaps a pound a day. This indicates that mastoid involvement is present and failing to drain. Unless immediate external drainage of the antrum is effected these patients die within a day or so. Many die if operated on as the earlier men operated, that is, slowly and thoroughly with a general anesthetic. If operated quickly, under a local anesthetic with a minimum of trauma, some recover. We have had many autopsies in cases not operated upon, and all show pus in the antrum. It is also usually necessary in these cases to stop food or limit its amount by mouth for a few days. It then becomes necessary to supply fluid to make up for that lost, and we find the combination of glucose and normal saline usually most effective. We have had a good deal of experience with the permanent venoclysis, in which way large amounts of fluid may be safely given. Another favorite method of supplying fluid is by the low-pressure, long-continued hypodermoclysis, in which the bag is held so low that very slight pressure is exerted, and the fluid flows in only about as absorbed. Here also we like the combination of glucose and normal saline, but the glucose must be kept down to about 5 per cent as it may otherwise damage the tissues. A considerable number of these cases recover under such a regimen. The essentials are early, quick operation under a local anesthetic and the replacement of fluid by external means.

Infection of any of the other sinuses accessory to the nose and throat may be the cause of failure to gain. A diagnosis may often but not always be made by physical examination, transillumination, or x-ray. When in doubt it is well to refer the responsibility to the nose and throat specialist.

Pyelitis may be the infection which is causing the failure to gain. It is usually easy to diagnose but not always easy to relieve, especially if due to some congenital anomaly plus infection from the upper respiratory tract. Fortunately these infections are not very common in private practice, where respiratory infection has not the opportunity to spread as it does through the wards of a hospital. It is probable that C. L. O. is of benefit in preventing these infections, perhaps because of its vitamin A content, which is also found abundantly in halibut and salmon oils. This is not definitely proven but seems quite probable. There is an undoubted effect from sunlight and fresh air which probably increases the general resistance.

●

There remain a small group of infants which, for some unknown or unexplained cause, do not thrive. Allergy explains a very few in which cow's milk or some constituent in it causes vomiting or diarrhea, sometimes accompanied by eczema or urticaria. If, after repeated trials of proper formulae, the child persists in losing, with diarrhea or vomiting, skin tests should be made with the various milk constituents. If any idiosyncrasy exists against cow's milk there is no use in trying to continue the milk. Then a wet nurse is the best treatment. Sometimes evaporated or boiled milk formulae will agree when raw milk will not. I have successfully fed some milk-allergic babies on a combination of oatmeal gruel, olive oil, and sugar. A Mead product, "Sobee," which is a preparation whose base is soy bean, may be successful in some such cases.

There remains another class that is very resistant to feeding. Some have been overfed on high fat or sugar mixtures; some have had an acute illness; some seem to have no known cause. These children will take and retain large amounts of proper formulae but will not gain. An examination of the stool usually shows a large yellow stool with much fat, and which may float on water. This type seems to do best on protein milk formulae, the simplest of which is buttermilk.

●

There is one more class in which, without any apparent cause, the infant stops gaining and loses its appetite, taking only a fraction of the food required to gain. Sometimes forced feeding two or three times a day with a tube plus a small dose of insulin once or twice a day will serve to start the infant up the hill towards recovery. These two types after suffering from several acute upsets, if not treated, become the cases of

marasmus which have lost the power of assimilating food, and about the only thing that helps them is human breast milk. Blood transfusions are often of help in these cases.

There are a few outstanding facts in the requirements of the premature baby. He needs more food proportionately than the full-term child. Evaporated milk formulae seem to be the best substitute for breast milk. He must be kept warm, preferably in some form of incubator. He is particularly susceptible to anemia and rickets, so iron and a concentrated vitamin D product such as viosterol must be given. He is very low in resistance to infection, particularly of the upper respiratory tract, and must be kept isolated from other children and adults who might carry infection. Use of operating room technique is the best method for prevention of infection.

●

To conclude: normal mother's milk is the best food for all infants for the first 6 months of life, if obtainable. It is not often obtainable and any simple formula based on the known necessity of certain fundamentals in feeding will sufficiently well take its place. The following are these basic fundamentals:

A sufficient amount of food must be given to allow for basal metabolism and growth. The amount is roughly about 2 oz. of milk per pound per day or, stated differently, about 40-45 calories per pound per day. Sufficient water must be given, about 3 oz. per pound per day, most of this being in the milk.

Sufficient protein must be supplied: about 1½ gms. per pound per day or about the amount contained in 2 oz. of milk per pound per day.

Boiled milk or evaporated milk is superior to raw milk because it is safer and more easily digested.

Cleanliness is essential in the preparation of the food from the cow to the child.

A good refrigerator is necessary for successful artificial feeding.

During the summer months, heat in itself, besides spoiling the exposed formula, will reduce the infant's resistance. Little clothing is needed and there should be as little exposure to great heat as possible.

Certain deficiency diseases like rickets and scurvy must be combated by the appropriate vitamins.

The premature baby must have more food than the normal child; it must be kept warm and all infection must be avoided.

All infants must be carefully guarded against infection, especially the upper respiratory infections.

If the seemingly normal child does not do well on a simple formula made according to the fundamentals laid down, do not rush from formulae to formulae, but find the abnormal condition affecting the child, then proceed to remove it.

●

Just a final word in regard to two abuses which have crept into pediatric practice:

1. The habit of a large, mostly foreign, section of our population of overfeeding their babies, encouraged by baby contests and unwise physicians, makes grossly fat children that are far from healthy.

2. The propaganda of milk companies with the slogan "a quart of milk per day per child" does definite harm in many cases. The child who has sufficient wholesome food at home does not need additional milk at school and this may diminish his appetite for more valuable food. In my opinion, milk is invaluable for infants before they acquire teeth and for old folks after their teeth have fallen out, but for all others its only value is as an accessory food of small importance. Its products: cheese, butter, etc., have all its virtues without its bulk and liability to quick spoilage.

52 South Portland Avenue.

● THE SYMBOLS OF MEDICINE, PHARMACY, AND PUBLIC HEALTH ARE CLOSELY ALLIED.

ACUTE CHOLECYSTITIS; ACUTE EMPYEMA OF THE GALLBLADDER: WHEN TO OPERATE

MOSES BEHREND, M.D., F.A.C.S., PHILADELPHIA

Surgeon to Jewish Hospital, Mount Sinai Hospital, Philadelphia General Hospital

WHAT do we understand by the terms acute cholecystitis and acute empyema of the gallbladder? Among different surgeons there is no doubt a fine divergence of opinion as to the degree of inflammatory reactions which would qualify the term "acute." It is this degree of inflammation which becomes the important factor in our decision when to operate on these cases. As a corollary, when one speaks of acute inflammatory conditions in the abdomen there comes to one's mind immediately, for purposes of comparison, acute appendicitis and acute salpingitis. While these structures are subject to acute inflammatory conditions, each must be treated in reference to its anatomical relations, its physiological phenomena and pathological reactions. Acute appendicitis should be operated upon as soon as the diagnosis is made. Acute salpingitis, we all know, should not be operated upon when acute inflammation exists. Similarly one should never operate upon acute inflammatory conditions of the gallbladder for the reason that danger of the lymphatics spreading their toxic products is always present, resulting in a shocking number of fatalities.

●

I challenge any surgeon, no matter how well versed he is in gallbladder surgery, to do what I like to call the "open operation" in the presence of an acute, highly inflamed, much thickened wall of the gallbladder and peritoneum, in other words a really "hot" gallbladder. It is impossible, because a complete operation, entailing as it does a fine dissection of the blood vessels and ducts in the region of the foramen of Winslow, cannot be made. As a result of dissections of approximately four hundred bodies, I have learned to respect the anatomical relations in this small area of the bile passageways. Anomalies were present in 25 per cent of those dissected. This has been verified also at operation. A much thickened peritoneal wall of the gallbladder, perhaps ten times its normal size, makes fine dissection increasingly difficult in a highly inflamed gallbladder; it may mean an incomplete drainage operation, to be followed later by a cholecystectomy, and this secondary operation always entails a rather stormy convalescence. However, after subsidence of symptoms we feel safe in removing the gallbladder. An incision is made through the structures in the region of the cystic duct to avoid injury to the common duct. Many common ducts have been destroyed as a result of operation in the acute stage as well as by lack of knowledge of anatomical structures. I have reached the conclusion that the large clinics, situated some distance from the city, do not see what I understand as acute cholecystitis and acute empyema of the gallbladder. When the patient reaches these clinics inflammation has already subsided and it becomes perfectly safe to operate. I want to sound a warning that if the teaching launched two years ago favoring operation in the acute stage persists, the death rate from cholecystectomy will be appalling.

●

Physiologically, it is also wrong to operate on an acute gallbladder. There is present a localized peritonitis which affects the surrounding structures, in addition to an acute hepatitis with a liver anxious and ready to absorb the toxic products resulting from traumatism. This is no doubt one of the causes of the little understood phenomenon resulting in what we have called "liver deaths." This may be due not to chemical changes but also to the absorption of the products referred to above.

Read before the Jacobi Medical Society, Washington, D.C., January 20, 1936.

At our Surgical Conference held in December, 1935, at the Philadelphia General Hospital, Dr. W. Wayne Babcock stated that the deaths resulting from the operation on acute cases ran as high as 50 per cent. If the truth were told the reports from other large clinics would probably support this statement. I can well remember that when I operated in an emergency on acute cholecystitis, or acute empyema of the gallbladder, the patients would die within twenty-four hours after operation. One patient especially stands out very vividly. It was just four days before I was going on my vacation. It was the desire of the family physician and myself to operate on this patient before I left. She died about twenty-four hours after operation as a result of a massive toxemia.

GENERAL PRACTITIONER AND INTERNIST

For many years I have tried to impress upon the general practitioner and internist that diseases of the gallbladder, especially acute conditions, are not in the medical category. Recently we have read of the great increase in the number of perforations of the gallbladder. This is primarily due to the prolonged so-called medical treatment of gallbladder disease and the aversion to operation on the part of the patient. A few weeks ago I operated on a woman who had been under the care of a gastro-enterologist for several years. Her gallbladder symptoms had recurred for the past twenty years. At operation the omentum was tightly adherent to the gallbladder. When these structures were separated a large amount of pus and a number of gallstones exuded from the perforation, which was large enough to admit my index finger. After much difficulty a cholecystectomy was finally performed. The patient made a good recovery. This patient had wished to be operated upon on several occasions but was always told to delay it.

Perforations can be prevented, but only through eternal vigilance on the part of the family physician and internist who primarily see the patient. Such treatment will practically become the preoperative preparation of the patient. Of what does this preparation consist? Let me impress upon you that I have never treated an acute gallbladder that would not subside if the following regimen were carried out. There must be absolute abstention from all kinds of food and drink, and when I say absolute I mean absolutely nothing by mouth. Other methods can be used to supply the patient with fluids by means of venoclysis, hypodermoclysis and proctoclysis. The last is used very little at the present time. A 10 per cent glucose solution is used for introduction into the veins and a 5 per cent solution subdermally. This treatment is continued until there is absolute subsidence of symptoms, which may mean 24, 48, 72 hours or longer. Inside of 12 hours symptoms will subside and usually at the end of two days fluids by mouth are allowed. The patient may then be ready for operation; but if on physical examination there is considerable tenderness and the pulse remains high, we should still postpone operation. A few months ago a patient was admitted to the hospital with symptoms of empyema of the gallbladder accompanied by fibrillation. She was then in no condition for an immediate operation. Four weeks afterward we removed her gallbladder. While she had a stormy convalescence she recovered, but the result would have been quite different had we made this an emergency case. Personally, I have had no disastrous results from waiting, without procrastination. I have encountered but two cases of perforation in over thirty years and one of these presented a perforation in the newly formed gallbladder following the operation of cholecystectomy. Furthermore, in three years I have had two deaths following the operation of cholecystectomy. These were due to cardiorenal conditions. In order that the treatment I have outlined may be carried out, it is usually necessary to hospitalize the patient, where the coöperation of the family and patient can be obtained and where the facilities are adequate to render this treatment.

MORBIDITY AND MORTALITY

There is no question that the morbidity is less as a result of the waiting period that I have suggested before operating upon acute cases. After subsidence of symptoms a small minority will leave the hospital believing they are cured, but it is well to remind the patient that he will return at some future time for operation. Naturally, when the operation can be done in one stage instead of two, the convalescence is prolonged. Economically this is of some importance, especially when one considers the changed social relationships that have occurred within the last five or six years. One can hardly fail to recognize the great drop in mortality following properly timed operation on acute cases. An aid to this lessened

mortality, in addition to the things I have mentioned, is spinal anesthesia. After subsidence of symptoms, when one attacks the thickened, indurated gallbladder, spinal anesthesia makes a rather difficult operation a comparatively easy one. While I am not unmindful of the dangers coincident with spinal anesthesia, I feel that it adds a life-saving quality to the operation. This is due to the relaxation of the abdomen, and hence the ease with which one can operate as a result of flaccid abdominal walls. We have used spinal anesthesia in nearly 3000 cases now, with one death which occurred as soon as the abdomen was opened. At postmortem there were definite signs of coronary thrombosis. This death, however, did not follow a gallbladder operation and may rightfully be charged against the hospital because one of the newer spinal anesthetics, a little cheaper than the preparation which we had been accustomed to using, was substituted.

LABORATORY EXAMINATIONS

Who would be today so remiss in methods as to plunge into an acute gallbladder condition without having a knowledge first as to the blood chemistry and even at times the aid of an electrocardiogram of the patient? With what a feeling of safety do we remove the rebellious gallbladder in the knowledge that the blood urea and blood sugar are normal! An electrocardiogram is of the greatest help, especially since we know that various degenerative processes of the heart are due to gallbladder disease. Years ago I called attention to the relationship between diseases of the bile passageways and the heart. Many degenerative changes, in the heart muscle especially, have been detected, manifested among other ways by dropped beats, irregular hearts, tachycardia, and other derangements of function. In fact, some cases of angina pectoris have occurred as a result of these infections. Removal of the gallbladder cured many of these cases of cardiac disfunction, but not all.

I have heard surgeons who advocate the emergency operation insist that laboratory examinations are nearly always done before operation is performed. They forget that it is exactly this time consumed in doing these things which takes such cases out of the emergency class. A day or two may elapse before the results are obtained, during which time symptoms have already subsided. One of the reasons for not operating on acute empyema of the gallbladder immediately is that the pus is infective and may cause spreading peritonitis. If the operation is performed later and leakage results, and it does occur in a fair percentage of patients harboring chronically inflamed gallbladders, the pus, if it escapes, is practically inert. This has been demonstrated to my satisfaction by many bacteriological examinations and by clinical demonstrations at the operating table. I never fear the escape of the contents of the gallbladder after symptoms have subsided, provided always that there is a proper walling off of the field of operation with sponges.

DIFFERENTIAL DIAGNOSIS

Some may argue that very often the differential diagnosis is not clear and, therefore, an acute appendicitis may remain unoperated upon for days with the usual fatal outcome. Any such doubts call for immediate operation, and, if it is found that a mistake has been made in the diagnosis, then the gallbladder should be treated to the best of the surgeon's ability. This will usually mean a cholecystostomy on account of the extreme danger of removing an acutely inflamed gallbladder.

However, there ought not to be any trouble in distinguishing an acute gallbladder from acute appendicitis, especially when these organs are occupying their normal positions. The classical symptoms need hardly be referred to here, but may I emphasize a physical sign that rarely fails in distinguishing diseases of these organs. In gallbladder disease there is definite tenderness and rigidity in the right upper quadrant which is intensified by deep palpation. In acute appendicitis the rigidity and tenderness are definitely lower down, in the right iliac fossa. Salpingitis need hardly be considered, but I vividly remember one patient who had a ruptured extrauterine pregnancy with all the subjective and objective signs in the right hypochondriac region. It was a most puzzling case until we obtained a history of the patient.

I believe that subphrenic abscess can coincidently accompany acute infections of the gallbladder; there is no question it may follow operations on the bile passageways. It is important to differentiate these collections from pneumonia and collapse of the lung. Recently a buxom Italian woman was admitted to the hospital with all the symptoms of an acute empyema with obstruction

of the cystic duct. Leukocytosis gradually rose until it reached 150,000. A week after admission to the hospital, a cholecystectomy was performed. After operation leukocytosis persisted; dyspnea was marked. An x-ray showed a subphrenic collection. After having made four different incisions seropus was found, after which the patient recovered following a hazardous convalescence.

The difference between acute pancreatitis and acute gallbladder conditions must also be reckoned with. In acute pancreatitis, the attack is of sudden onset and there is intense pain accompanied by abdominal rigidity, shock, and the fear of impending death. There are other various gradations of these symptoms, depending upon the fulminating character of the explosion. Very often fleeting attacks of chronic pancreatitis may be mistaken for acute cholecystitis, but the symptoms in this type of pancreatitis subside very quickly, whereas in acute cholecystitis the symptoms remain for some time.

Perforated ulcers of the stomach and duodenum can best be recognized by the history of the patient. In ulcer cases there is usually a long history of previous gastric symptoms, whereas in acute cholecystitis and acute empyema of the gallbladder there is a previous history of many attacks of cholelithiasis. These attacks occur usually in the early morning hours, while the pain of ulcer may occur on a fasting or a full stomach depending upon the location of the ulcer.

Nephrolithiasis and acute conditions in the gallbladder are important entities to differentiate. Here, again, there is one unfailing sign that we cannot mistake in arriving at a diagnosis. In surgical conditions of the kidney there is always tenderness and rigidity in the loin space, whereas, as stated before, in inflammation of the gallbladder this rigidity and tenderness is always directly under the costal border in the right hypochondriac region.

X-ray, pyelography and examinations of the urine will be of considerable help in differentiating conditions resident in the gallbladder and kidney. For differential diagnosis I will not discuss here collections in the epigastric region, cysts of the mesentery, tumors of the loin space, and other conditions affecting the duodenum and stomach, on account of their frequent chronic manifestations.

CONCLUSIONS:

1. Finally it must be recognized that different grades of inflammation exist in acute diseases of the bile passageways.

2. Operations on acute cholecystitis and acute empyema of the gallbladder during the emergency will lead to a spreading peritonitis and an increase in the number of liver deaths.

3. Operations must always be performed with due respect to the anatomical relations; 25 per cent of these are anomalous.

4. The patient suffering from these acute conditions should be hospitalized at once. Here only can orders of the physician be carried out to the "letter of the law."

5. Perforations can be prevented by means of less procrastination on the part of the general practitioner and internist.

6. It should be our desire to prevent two-stage operations when they can be done in one stage.

7. Proper preoperative care and spinal anesthesia will save many lives.

8. Blood chemistry and other necessary laboratory examinations should be utilized before the patient is operated upon for conditions affecting the gallbladder.

9. Should any doubt arise between the differential diagnosis of acute gallbladder disease and acute appendicitis, immediate operation is indicated.

1738 PINE STREET.

DIAGNOSTIC CRITERIA OF COLONIC CANCER

CURTICE ROSSER, Dallas, Texas (*Journal A. M. A.*, Jan. 11, 1936), analyzed 100 unselected and consecutive cases of cancer of the colon received in the service of various members of the surgical staff of a 500-bed general hospital. Comparison with statistics on 1,564 cases compiled by six observers indicates that there is a very definite location incidence of colonic tumors, more than one half being found in the descending colon and sigmoid, one fourth in the secum and ascending colon, and approximately one fifth in the midcolon.

●

EARLY WOUND TREATMENT

In the first six hours accidental wounds are practically germ-free and hence treatment within these golden hours is likely to be successful.

John J. Moorhead, *Southern Surgery.*

POLLITZER'S INTENSIVE ADMINISTRATION OF ARSPHENAMINE

HERMAN GOODMAN, B.S., M.D., New York, N. Y.

INTRODUCTION

IN the following notes, I give the impressions of the immediate results of a modified form of treatment of syphilis which was advanced by one of the veterans of our specialty—Dr. Sigmund Pollitzer of New York. During the past fifteen years, I have used the method in private practice on those patients who presented infectious lesions of the primary and secondary phases of syphilis. My results have been excellent. At this time, almost coincident with the celebration of the fiftieth anniversary of Pollitzer's induction into medicine, these notes should carry a special interest.

●

The following serves as a report of the results of therapy as gleaned from a study of early syphilis. The patients were for the most part newly drafted men in whom the infection was recognized at the first general inspection after their arrival in camp. A few men were admitted who had acquired the disease after entry into the army.

Diagnosis of early cases was made by the demonstration of the offending organism in many cases where the diagnosis was at all doubtful clinically. In cases presenting unmistakable primary lesions, the diagnosis rested on clinical grounds alone, especially in the periods when new men were being admitted and no time for extensive search could be given. History we regarded as of little value. The reported incubation time cannot be reliable with men who are repeatedly exposed to infection. The duration given by the patient is more times than not at variance with the known course of the disease.

The initial lesions were all genital and for the most part multiple. The reason for this is that the mucosa of the prepuce sustains injury and numerous contacts with infectious lesions make the entry of the *Spirochaeta pallida* certain.

The frenum is a point of lowered resistance to the enry of the *Spirochaeta pallida*. At least half of the cases present the initial lesion in this location. In not a few of these, neglect and secondary infection lead to deep ulceration which sometimes extends around the coronal sulcus. In two cases, the ulceration had proceeded to such an extent that the corpora cavernosa and spongiosa were exposed for over an inch.

Rarely do we see the indurated, ulcerated papular chancre which bears Hunter's name. The ulcerated lesions we do see are usually larger and the tumor character is absent.

One especially interesting but fairly common type of initial lesion is presented by multiple lesions of the free edge of the prepuce, a sort of rosette which because of the accompanying edema results in an artificial phimosis. Another fairly common type of initial lesion is one of the meatus urinarius. The sclerosis is situated either on the mucous surface or on the skin border.

Patients were admitted to the wards with the clinical diagnosis of primary syphilis who had passed the primary serological stage and were in the "silent generalization stage." They presented chancre, no secondary lesions of the skin or mucous membranes, but the Wassermann was reported double-plus. (Reference: Goodman, Diagnosis and Treatment of Syphilis in Men, *American Journal of Syphilis*, April, 1918). Twenty-three patients were in this group. We have seen instances of destruction of the entire glans penis, for example, for which the patient had had no treatment.

We had sixteen generalized secondary cases. We saw a number of recurrent secondary syphilitics and a few examples of condylomata lata. Mucous patches were rarely seen. In the majority of cases the patient had not had modern treatment prior to his entry into the army and in all too many cases self treatment alone had constituted the previous therapy.

Three cases were diagnosed by the serological reaction alone. These cases were in the latent tertiary period and presented no lesions. They came on the ward with vari-

ous non-syphilitic manifestations. For example, one patient was admitted for bed wetting. On a previous admission he had been under the observation of the neurologists, who sent him out unimproved. He presented no lesions but the routine Wassermann reaction was double-plus. Arsphenamine therapy did not improve his sad condition.

Nine patients were admitted with active tertiary manifestations. The age of the infection varied from two to eight years. This group of men presented gummatous infiltration of circumcision wounds; unhealed buboes; gumma of the tongue and one gumma of the shaft of the penis at the site of the primary lesion five years before.

●

The plan of treatment followed was on lines laid down by Dr. Pollitzer. This plan is termed the "intensive" method in distinction to the "intermittent" method. The intensive method consists in the daily administration intravenously of arsphenamine for three doses. The dose consisted of four decigrams dissolved in fifty c.c. of freshly distilled and boiled water, and alkalinized to comparative neutrality with fifteen per cent sodium hydroxide. This mode of treatment is a desirable variant of the therapia sterilisans magna of Ehrlich. The theoretical reason that Ehrlich gave for the failure of his method was that the single dose killed a large number of spirochetes but that some few escaped, multiplied, were sensitised to arsenic, and more dangerous than before. Another reason advanced was that the excretion of the arsenic began almost as soon as injected. In the first few days most of the drug was out of the body. The intensive method overcomes these features because the concentration of the arsenic product in the blood is kept at a high level.

The figures in Wolbarst's translation of "The treatment of syphilis with salvarsan," Rebman Company, 1911, page 85, follow:

"After the intravenous injection, arsenic was eliminated much more rapidly and completely than after the subcutaneous method.

Paralytics given 0.3 gm. intravenously:
First day 0,0072 gm. arsenic was found
Second " 0,0792 " " " "
Third " 0,0053 " " " "
Fourth " negative.

Investigations in other patients showed the same results, the excretion of arsenic having been complete within two to three days."

Following the intravenous medication, mercury salicylate in grain doses was given once each week that the patient remained on the ward. It has been our experience that the Negro is a bad subject for mercury therapy because of the ease with which small doses cause stomatitis. This occurs despite the care that we insist that the ward patients take of their teeth and gums. They must use the tooth brush twice daily and the mouth wash after each meal. We have painted the gums also with mixtures of equal parts of tinctures of iodine and myrrh but the results were not gratifying subjectively. In bad cases the dental department coöperated and put the buccal cavity into good condition before we administered mercury.

Many of the cases presented a secondarily infected initial lesion. The spirochetes are demonstrable. The Wassermann has occasionally been double-plus. The intravenous arsphenamine has not healed the lesion. Induration and further ulceration cease but epithelization of the lesion does not occur. Clinically this lesion is about one centimeter in diameter, usually multiple, situated on the mucous surface of the prepuce, sometimes on the coronal junction, and when first seen is covered by a slough. We found that local treatment of this type of lesion was an important matter.

●

We found that the local care of the purely syphilitic chancre gave us little concern. The intravenous treatment was all that was necessary to effect rapid epithelization.

Several lesions were cauterized with the actual cautery. The immediate reaction was far less than one would expect from the type of trauma inflicted. There was no subjective discomfort after recovery from anesthesia, the edema was insignificant and there was little oozing. The results were an improvement over any other method used.

It had once been our hope to remove surgically all accessible lesions, for instance, those of the prepuce. The results of this procedure convinced us that circumcision should not be practiced as a routine measure. The wounds we observed were slow in healing.

The inguinal nodes in many cases were enlarged on admission and few cases gave

a sense of fluctuation. In no instance did we incise these glands. The cases left on the ward from former surgeons taught us that there was delayed repair of the tissues and a protracted ward residence. Repeated arsphenamine courses were given and operative interference avoided.

●

In comparison with work done using the intermittent mode of intravenous injections, immediate clinical results are obtained with surprising rapidity. Uncomplicated syphilitic lesions disappear within a very short time. The patient is no longer a menace to his fellows. Early chancres and condylomata lata are most readily overcome. Mucous patches and late secondary skin manifestations are readily amenable. In other words the infectious lesions are soon destroyed. The cases that delay the ward service and take up beds over long periods are those with secondarily infected lesions, and those with other than syphilitic manifestations. In every instance of incised inguinal glands intravenous therapy alone did not heal the lesion. In several instances which gave fluctuation of a gland and it was not incised, the intravenous medication alone relieved the symptoms. Operative wounds were infected.

We cannot say of this treatment that it is all that is required in the individual therapeutic attack on syphilis. We believe that in early cases of chancre, no inguinal gland enlargement and a negative Wassermann, the disease is entirely eradicated. We know that in cases later than the primary stage, this treatment is inadequate. Once the disease has advanced to the draining lymph glands and the Wassermann is positive, treatment time for cure is not measured by weeks or months, but by years.

A few responses of the Wassermann reaction have been noted. Twice in patients in the silent generalization stage has the serology been reversed from double-plus to negative. Once in a latent tertiary case, and once in an active tertiary, has the same result been accomplished. Changes from double-plus to one-plus and to doubtful have been recorded.

The serological results were secured during the therapeutic period and, of course, are not to be considered as permanent changes.

The serological results have not always been promising. In the primary stage, two cases have gone from negative to doubtful, and four cases from negative to one-plus. Three patients in the silent generalization stage have advanced from doubtful to double-plus. We are not willing to concede that this is evidence of the provocative action of the arsenic. These cases require persistence of treatment.

Clinically no case has advanced from the primary stage to the secondary during our own period of treatment. One case was returned to the ward with mucous patches and one-plus Wassermann. He had had the intensive treatment when in the silent generalization stage. The after treatment of this case was not carried out as it might have been.

What has been the general effect on the patient? Exceedingly gratifying. We have seen no important ill effect. In one case, the second dose of the preparation we were using gave symptoms of intolerance and we interrupted the course. On odd occasions, a patient would vomit after partaking of the light repast provided six hours after receiving the injection. This did not contraindicate further use of the drug.

We chart the number of patients in each of the syphilitic stages by the days in the hospital.

Number of days	Primary	Silent generalization	Secondary	Latent Tertiary	Active Tertiary
Under 10	4	3	5	11	0
10 to 15	6	7	4	1	1
15 to 20	5	5	2	1	5
20 to 25	3	2	2	0	2
25 to 30	2	0	1	1	0
over 30	4	4	1	0	0

Of the seventy-three patients recorded here, thirteen were in the hospital less than ten days; thirty-two did not stay two weeks; and fifty were out by the twentieth day. In the case of nine other patients we had not noted on our copy of the history the number of days spent in the hospital.

THE INTENSIVE TREATMENT OF WOMEN

The urgent necessity of rendering innocuous a number of women who were likely to become disseminators of syphilitic infection made it desirable to use the intensive application of arsphenamine.

Two classes of cases are reported. The first and most important is a group in which the lesions of syphilis were present about the genitals and the Wassermann

was four-plus. There were fifteen women in this class; ten with condylomata lata; two with chancre; one with mucous patches and ulcers of the cervix; one with incised and ulcerating inguinal glands; and one with maculopapular secondaries.

The second group of cases were seven women who presented no lesions of syphilis, but whose Wassermann reaction was four-plus. The youth of these made it evident that the syphilitic infections were comparatively recent, and it was deemed advisable to give them arsphenamine in the hope of preventing recurrences.

The intensive method as used by us again consisted of the daily administration intravenously of arsphenamine for three doses. The dose for women is three decigrams.

All except two of the women received the preparatory grain of mercury salicylate intramuscularly prior to the first arsphenamine injection. Catharsis was given the night before. All were on a limited diet of milk, soup, and bread for the three day period. Water was given freely. Not a few complained of hunger, which is to be expected. There were no reactions, immediate or remote from the time of injection. We attribute this entirely to the preparation of the solutions, the dilution, and the care of the patients. Immediately after receiving the injection, the women were put to bed and kept there for four hours. After that, staying in bed was optional, but they were kept quiet and in the open air.

The clinical results were: Syphilitic lesions disapeared within a few days. The patient was no longer a menace. Chancres and condylomata lata were most readily overcome. Mucous patches and skin lesions were next amenable. In other words, infectious lesions are soon destroyed, which is a most important factor in the prevention of community syphilis.

We were not willing, however, to permit the patients' future to rest with a single "three day dose" trial, so that cases which had had infectious lesions and were under observation six weeks later were given a second session. Mercury salicylate in grain doses intramuscularly was given weekly.

The Wassermann reaction was repeated on all patients and about half the cases gave a complete reversal from positive to negative.

●

In our work at the Hospital Jail of San Juan, Puerto Rico, fifty-two patients with three or four-plus positive Wassermann reactions, free of active clinical syphillitic lesions, were given the "intensive" treatment, using neodiarsenol.

The first dose of neodiarsenol was 45 centigrams; the second was 60; and the third was 75 centigrams; a total of 180 centigrams injected in 48 hours.

The patients were given a cathartic the night preceding the first injection, and were on a limited diet for the three days.

Except in one patient who was pregnant, and complained of abdominal pains, there was no general reaction. This patient received only two injections, one of 45 cg. and the second of 75 cg. In two cases mechanical difficulty with small veins and nervousness prevented the injection of the third dose. In two other cases, poor technic on the second day led to infiltration and the third dose was not given.

In nearly every case, three or four intramuscular injections of grain doses of mercury salicylate had preceded the neodiarsenol therapy.

●

The Wassermann was repeated in all except nine cases, fourteen days after the last injection.

Of the 43 women whose Wassermanns were reported prior to and after the series of injections:

4 reduced from three-plus to negative
15 reduced from four-plus to negative
1 reduced from four-plus to doubtful
1 reduced from four-plus to one-plus
3 reduced from four-plus to two-plus
(One of whom received only two doses)
17 remained four-plus
(Two of whom received only two doses)
1 remained three-plus
(She received only two doses)
1 went from three-plus to four-plus

If one were permitted with such small numbers to estimate percentages, they would be as follows:

Reduced to negative, 44 per cent
Not reduced at all, 44 per cent
Reduced slightly, 12 per cent

In the series of seven cases of latent syphilis treated at the same time with arsenobenzol (Schamberg), six had Wassermann tests after the series of injections:

3 reduced from four-plus to negative, or 50 per cent
2 not reduced at all, or 33 per cent
1 reduced slightly, or 16 per cent

SUMMARY

Eighty hospitalized syphilitic Negro men and about an equal number of women, both white and black, were given intensive arsphenamine treatment: a dose every day for three doses. The clinical results were gratifying in all uncomplicated syphilitic manifestations. The infectious period of the patient was reduced quickly. The changes in serology were encouraging.

No further precaution than for the administration of arsphenamine intermittently was taken. We do not hesitate to recommend the procedure for more general use.

The public health value of this method of therapy should be emphasized.

●

SUGGESTION

At this time, there is a wonderful opportunity for treatment of syphilitics through one or another of the great governmental agencies designed to relieve distress. The intensive administration of arsphenamine should be considered in the care of infectious lesions in registered transients as well as in the case of recipients of aid who live at home. If there were competent research for disclosing the syphilitics in our population and treatment were administered it would be but a short time until new infections would either cease or be materially reduced. The period of hospitalization (when this is necessary) required by the intensive administration of arsphenamine to reduce infectious lesions is short. Our experience in army work, in the care of incarcerated prostitutes, as well as in civilian practice since 1920, warrants more extensive use of the method of intensive administration of arsphenamine in syphilitics.

●

This practical modification of an earlier method is accredited to Dr. Sigmund Pollitzer, who recently celebrated his fiftieth year in dermatology.

18 EAST 89TH STREET.

THE MEDICAL AND NURSING SERVICE OF THE EMERGENCY RELIEF BUREAU

A total of 23,280 families received medical attention, either by physicians' or nurses' visits, or medication by a voluntary hospital, during the month of January. A study of the families treated reveals that approximately 60% of the families to whom physicians were sent were suffering from colds, tonsilitis, grippe, measles, mumps and similar conditions. In a great many cases, three, four and even five members of a family were ill during a period of two weeks.

●

The families treated were acutely ill and in a majority of cases necessitated two or more visits by a physician. It is felt that if the Medical and Nursing Service was not providing medical attention to these patients, all of them would either have no medical attention or else would call ambulances, thereby increasing the load on the already over-burdened city hospitals.

●

In 10% of the relief families in which physicians are called, the patients are considered ill enough by the physicians to be hospitalized; approximately 14% of the patients treated are suffering from pneumonia or grippe, with serious complications, such as badly abscessed ears, or infected glands of the neck, but not serious enough to require hospitalization if home conditions are such that they can be properly cared for there. These cases are then treated by the physician in the home.

There are approximately 4,700 doctors at the present time making calls in the five boroughs for the Emergency Relief Bureau.

●

The Medical and Nursing Division has a Medical Advisory Committee of which Dr. John A. Hartwell of the New York Academy of Medicine is chairman. Other members are: Wm. H. Best, Deputy Commissioner, Dept. of Health; Dr. David J. Kaliski, Chairman of the Coordinating Council of the Five County Medical Societies; Dr. A. E. Shipley, Deputy Commissioner, Department of Hospitals; Dr. Charles E. Farr, Representative of New York County Medical Society; Dr. E. P. Flood, Representative of Bronx County Medical Society; Dr. E. H. Skelton, Representative of Kings County Medical Society; Dr. W. C. Buntin, Representative of Richmond County Medical Society; Dr. W. K. Rogers, Representative of Queens County Medical Society; Dr. Charles F. McCarty, Director, Medical and Nursing Service and Secretary ex-officio of the Medical Advisory Committee.

PRACTICAL POINTS IN THE DIAGNOSIS OF STERILITY IN THE MALE AND FEMALE

JOSEPH H. FRIEDMAN, M.D., New York, N. Y.

Attending Urologist, Manhattan State Hospital
Adjunct Urologist, Joint Diseases Hospital

DIAGNOSIS is very important, as the actual seat of trouble is essential to scientific treatment. One must know not only whether the male or female is at fault, or both, but also one must endeavor to determine in what part of the anatomy of either sex the impediment lies, before commencing treatment.

METHODS

One of the oldest methods of determining the fructifying ability of the male is the examination of a condom specimen, but this has its limitations and must be done in a definite manner.

When the specimen arrives at the office it should not be exposed until everything is in readiness for examination. Microscope, slides, cover-glasses, etc., should all be ready. For examination of semen, only an ordinary microscope with high and low power lenses is necessary. There is no need of warm-stage apparatus, or anything else, to preserve the specimen during examination. There is no special art or experience necessary for such an examination, and any general practitioner should be able to examine a condom specimen.

When everything is in readiness, we may proceed to procure the specimen. I have always found that the more complicated the method, the more the specimen is poured from dish to dish, the worse the result. The only instrument I employ is a large pipette.

The general appearance of the field should be noted, first using the high power. In a normal specimen, innumerable spermatozoa are at once seen dashing very rapidly about the field. Whenever one has to search for spermatozoa, it shows that the semen is abnormal. There are no two ways about it, either one sees them at once or one does not. Staining is not advisable.

If, instead of the above picture, however, we see at once many Böttcher's crystals, we can immediately decide that the semen is abnormal. In this case, the spermatozoa are either greatly diminished in quantity, or are dead, absent, or moving very feebly. An occasional crystal can be seen in normal semen, and if normal semen is examined after the spermatozoa have all died, we will also find them in large quantities. It is the *early* finding of a large quantity of these crystals that stamps the specimens as abnormal.

The theory of the formation of these crystals is as follows: A moving fluid does not crystallize, or does so very slowly. In semen containing many moving spermatozoa, therefore, the crystals either do not form at all, or do so very slowly, whereas they are formed rapidly and in large numbers in semen containing either no spermatozoa or only dead ones.

DEDUCTIONS

In these cases, in which repeated condom examinations, after long periods of continence, persistently show no spermatozoa at all, we have by no means done our duty to the patient by telling him he is sterile, and perhaps advising some operation on the epididymis. We must determine whether the absence of spermatozoa is due to an obstruction in the epididymi or vasa, or whether it is due to the fact that the testicles themselves do not manufacture spermatozoa, or to both conditions combined. It is perhaps unnecessary to state that the testicle has two distinct and independent functions, one, the spermatogenic function, and the other the secretion of a hormone which determines the secondary sexual characteristics of the man. Either function may be destroyed without interfering with the other. On the one hand, we have the person who is manly in every respect, with normal sexual desire and power, with nor-

mal secondary sexual characteristics, yet whose semen contains absolutely no spermatozoa. On the other hand we have the invert, with no sexual inclination toward a female, but marked libido toward one of his own sex, with many marked feminine characteristics; yet, when he marries, as he sometimes does for economic or other reasons, he is able to impregnate his wife and bring forth progeny.

It is with the former of these types that we have to deal. To advise an epididymovasostomy simply because no spermatozoa are found in the semen is absolutely unjustifiable. The condition may be either congenital or acquired. An attack of mumps, or a severe gonorrheal orchitis, may produce the condition. How are we to diagnose this condition from azoospermia, for, in some cases of gonorrhea, not only is the epididymis attacked, but the inflammation is so severe that it takes in the testicle at the same time, completely destroying its spermatogenic function? Here, again, epididymovasostomy or any other operation is doomed to failure. On the other hand, I have called attention to a form of epididymitis or vasitis, in which there is not present the acute pain or swelling which accompanies the ordinary form of epididymitis, but in which there is just enough inflammation to cause an agglutination of the walls of the epididymis or vas. The patient never knows he had an epididymitis, there is not felt thereafter the hard, thickened nodule so characteristic of a previous epididymitis, but the obstruction is there just the same, and in cases where both sides are affected, absolute azoospermia results.

I have devised a method of differentiating certain forms of this condition. It consists in aspirating the testicle and immediately examining the aspirated material for spermatozoa—if found present, our diagnosis is one of obstruction of the vas and operation is indicated to relieve it.

Many pus cells in a condom specimen are distinctly abnormal and, if associated with absent, dead or feeble spermatozoa, we can, in a general way, conclude that there exists some pathologic condition in the male sexual apparatus which is responsible both for the pus cells and the abnormal semen.

The finding of dead spermatozoa in the semen has great diagnostic value—it rules out obstruction in the vas or epididymis, and permits the conclusion that epididymovasostomy, the operation of anastomosing the epididymis and vas, is absolutely contraindicated in such a case. In these cases it must be determined, by careful examination of the seminal vesicles, prostate and urethra, just where and by what the spermatozoa are killed. In such cases one should also make one's own condom examination and not rely upon the report of a laboratory or other physician. One should also carefully inquire of the patient just how he collected and preserved the specimen, for, at times, in spite of careful instruction, the patient may have slipped up in some detail, and caused the death of the spermatozoa after ejaculation.

Immature and deformed spermatozoa are occasionally found in a condom specimen. These are probably useless for purposes of impregnation, but do no harm and are occasionally found in perfectly normal semen. The main point in determining the fructifying power of semen is the finding of a large number of actively moving spermatozoa in every field. This is all we can expect to determine from the examination of a condom specimen. The viability of the spermatozoa in the various secretions of the female genitals, and their actual value for purposes of impregnation, cannot be determined by any chemical or physical test of the specimen itself, nor can any conclusion be drawn from the behavior of spermatozoa from such a specimen under the microscope. I purposely desire to emphasize this point because there are some observers who have tried, and actually recommend, the timing of the rapidity of motion of spermatozoa from a condom with the aid of a stop-watch, and base their valuation of the semen upon such observations. Others have recommended the observance of how long spermatozoa will remain alive under the microscope. For many years I have protested against all these tests because they are not only not practical, but also because they are unreliable. What do we care how long spermatozoa live under the artificial conditions of the microscopic stage, as long as we can determine accurately how long they live, if at all, in the female genitals? Surely, for practical purposes, the latter deduction is of greater value than the former. Moreover, we test the vitality of the husband's semen in the genitalia of his own wife, which itself is of the most important and practical diagnostic value.

In the first place, we cannot in any case be sure that the spermatozoa will ever reach the cervix and fundus, or even the interior

of the vagina. Take a case of hypospadias or epispadias; the condom specimen will be absolutely normal, yet, on account of the abnormal urethral opening, the fluid may be ejaculated entirely away from the cervix, or even outside of the vagina. As another example, we may mention a tight stricture of the urethra; here, again, the condom specimen will be all that can be desired, but, on account of the stricture, the fluid is not ejaculated at all, but dribbles out of the meatus after the organ becomes flaccid. As another and very common condition, take the cases of partial impotence, with very rapid or even premature ejaculation. Here, again, the condom specimen may be normal, but, on account of the weak ejaculation, the semen is deposited far away from the cervical os, at the very entrance of the vagina, or, in particularly bad cases, ejaculation takes place before penetration. Among other conditions showing a normal condom specimen, but in which the semen does not reach the cervix, may be mentioned abnormal positions of the cervix itself, awkward coitus, etc.

Another serious limitation to the condom test is, that even if the spermatozoa get into the wife's genitals, there is no way of telling whether they will survive there. I cannot lay stress too emphatically upon the point that, no matter how active or normal spermatozoa appear under the microscope, there is no way of telling from their appearance, or action, that they will live in the various secretions of the female genitals. Moreover, a chemical examination of the female secretions will also not give us any reliable data. Various experiments have been tried in both these directions, but little progress has been made. Besides, all such tests are not only time-consuming, but require the services of an expert chemist, and are totally unsuitable for general use.

A SIMPLE TEST

It was such limitations in our diagnostic ability with condom specimens that induced me, many years ago, to make a series of experiments and observations upon the behavior of spermatozoa within the female genitals. The test is simplicity itself, and gives us such a fund of information regarding the diagnosis of sterility, eliminating the disadvantages and limitations above referred to, that I make no apology for presenting it at some length. I hope the time has passed when the physician examined a drop of semen from a condom, and, finding normal spermatozoa, immediately told the husband he was all right, and placed all the blame on the female.

The couple is instructed to have intercourse without a condom and the woman presents herself at the office two hours later. Smears are taken first from the vaginal outlet, next from the posterior cul de sac, and lastly from the cervical canal.

Let us interpret some of the findings. If spermatozoa are found alive at the vaginal outlet, and none in the posterior cul de sac or in the cervical canal, it means premature ejaculation. If found only in the vaginal outlet and in the posterior cul de sac, it means that the husband is depositing spermatozoa in the proper place, but, due to a faulty position of the uterus or some cervical fault, no semen gains access to the cervical canal. If found alive in the cervical canal we then know that the trouble is higher up. First, a small undeveloped or infantile uterus; second, an obstruction in the tubes; and third, an abnormal condition of the ovaries, endocrine or otherwise. These conditions are to be considered. Similarly, we need not worry about many other conditions which are commonly supposed to be the cause of sterility, such as diminution or absence of orgasm in the woman, stricture of the urethra, epispadias, hypospadias and other conditions in the male, for we have found live spermatozoa in the cervix, and we therefore know that none of these conditions has any influence in this case of sterility.

Likewise we need not worry over the possibility of the cervical or vaginal secretions being inimical to the vitality of the spermatozoa, nor need we subject these secretions to chemical examinations, for again we know that they cannot be the cause of the sterility in this particular case. And so we may go through many of the theoretical ideas as to the etiology of sterility, and see how frequently they are dismissed as the result of this brief examination.

Suppose, however, that only dead spermatozoa are found in the cervix. We then examine a condom specimen, and, if it contains only dead spermatozoa, we know the fault is with the husband; if live spermatozoa, however, are found in the condom, we know at once that the genital secretions of the female have killed the spermatozoa. Again we do not need to submit the secretions to time-consuming chemical and microscopic examinations to arrive at this conclusion, for we have the *physiologic*

proof before us. In this condition, if we find the vaginal or cervical secretions markedly acid, we order a bicarbonate of soda douche before coitus, and make another test. If this second test now shows only live spermatozoa in the cervix, we have not only made our diagnosis, but have been informed as to how to preserve their vitality and cure the sterility.

If no spermatozoa at all are found in the cervix, the husband may still be at fault, even though live spermatozoa are found in the condom. This is one of the most important practical features of the test. Ordinarily, a normal condom specimen was considered absolute proof that the husband was not responsible for the sterility. A gynecologic examination was then resorted to, and any slight deviation from the normal was at once seized upon as being the cause of the sterility, whereupon the wife was subjected to prolonged treatment and even operation.

The first condition can easily be diagnosed by vaginal examination. If we find a small undeveloped uterus in a sterile woman and no other pathologic condition present, we may reasonably conclude that this is the cause of the sterility, and, in my experience, it is a very common cause. I must, however, warn against jumping to the opposite conclusion, as when upon routine examination we find a small uterus and proceed to prophesy that the woman will be sterile. I have repeatedly examined women after marriage for other complaints, and have found very small uteri, and yet the women conceived and gave birth to children.

Obstruction in the tubes can now be positively diagnosed by the lipiodol test; the technic is injection into the uterus and tubes, which are x-rayed to show patency of the tubes.

The third condition, insufficient ovarian secretion as the cause of sterility, can be considered to be almost certain in those cases where we find an infantile uterus, together with late onset of menstruation, scanty menses, and menses coming on at very infrequent intervals, say only three or four times a year. To this syndrome is sometimes added lack of sexual desire, but, inasmuch as this latter symptom is very common in fertile women, it has little weight as a diagnostic phenomenon. Here we have a distinct endocrine disturbance, in which, in all probability, the other endocrine organs are also disturbed with the ovaries. Many of these cases are congenital in origin, or owe their onset to some disturbance prior to puberty. Endocrine treatment is distinctly in order, and I have had some remarkable results in this class of cases with corpus luteum extract.

FINAL CONSIDERATIONS

Ovarian sterility may also be due to ovarian cysts, corpus luteum cysts, thickening of the tunica albuginea, thus preventing follicular rupture, etc. In these cases, the direct disturbance is also, in many cases, endocrine in character, but the cause of the endocrine disturbance is found in local pathology. In some cases a pathologic condition in one ovary will cause endocrine disturbance in both ovaries. Many of these cases can only be diagnosed by exclusion and some only by laparotomy.

Finally, in some cases there exists a disharmony between the spermatozoa of the male and the ova of the female. In these cases, both parties can produce offspring with different mates. Although some experiments have been made by testing the serum of the female against the spermatozoa of the male, no definite conclusions have thus far been arrived at, and no diagnostic aid has resulted from these experiments.

In this paper I have shown that a careful study is necessary to lay our hands directly on the offending organ or function in either sex.

320 Second Avenue.

PREVENTION OF BIRTH INJURY AND ITS RESULTING MORTALITY FROM THE STANDPOINT OF THE OBSTETRICIAN

Charles Edwin Galloway, Evanston, Ill. (*Journal A. M. A.*, Feb. 15, 1936), points out that birth injury may occur in any type of delivery. Therefore, it is essential that a careful explanation be given to parents, and the most valuable explanation comes from the consultant, most often the pediatrician, who is not present at the birth. The incidence of birth injury is very difficult to ascertain. At the Evanston Hospital, investigation of the last 5,000 deliveries reveals that there were fifty-one major injuries including fatal cerebral hemorrhage. Besides these there were thirty-seven minor injuries including abrasions from forceps and other contusions of minor importance. At the same hospital an analysis of the fetal autopsies for the last ten years shows that 34 per cent of these fetal deaths including premature babies were due to cerebral hemorrhage.

ITCHING, ECZEMA AND FURUNCULOSIS OF THE EXTERNAL AUDITORY CANAL

SAMUEL ZWERLING, M.D., F.A.C.S., Brooklyn, N. Y.

Associate Attending Otolaryngologist, Greenpoint Hospital; Assistant Surgeon, Brooklyn Eye and Ear Hospital

OWING to the diversified etiology, one must take special pains in obtaining a careful and complete history in cases of itching of the ears. To the patient, the pruritus is not only a distinct discomfort but often an embarrassment and at times "maddening." To the family physician as well as to the otologist, the treatment of the itching, eczema and furunculosis of the external auditory canal and the care of the patient as an individual often constitute a severe trial.

The itching is usually the forerunner of eczema, although they may be associated throughout. The eczema, however, if allowed to progress, soon becomes chronic and goes on to the stage of suppuration and canal-wall infection. The etiological factors and sequelae are so closely interrelated that they must be considered together.

The literature does not treat this subject in toto but disassociates the etiological factors from one another and in a measure separates them from the sequelae, so that the treatment of the more common dermatoses of the external auditory canal has remained a problem to the physician. The purpose of this paper is to outline the subject and simplify the treatment so that the family physician will be better able to treat and retain his patients. The more involved and chronic cases, and those of reflex or remote disturbances and of "tubal origin," will be more readily recognized.

ETIOLOGY

The sensation of itching in the external auditory canal may be due to either (1) local (2) or reflex and remote disturbances; the latter occurring in adults; the former occurring in infants as well as adults.

We term the following causes remote or reflex even though they are situated within the head. This classification is employed to simplify and perhaps better to catalogue the etiological factors.

The Remote or Reflex Disturbances Are

1. Chronic tonsillitis (faucial) with or without hypertrophy
2. Hypertrophy of the lingual tonsils
3. Nasopharyngeal growths
   a. Polyps
   b. New growths—benign or malignant

The remote or reflex causes are mentioned but will not be discussed, for such discussion would soon become involved, removing this paper from the scope of a general practical discourse.

LOCAL

1. Tubotympanitis
2. Poor aural hygiene
3. Swimming
4. Impacted cerumen
5. Vigorous nose blowing
6. Chronic suppurative otitis media
7. Presence of foreign bodies, animate or inanimate
8. General debilitating conditions
9. Fungoid growths
10. Age and sex
11. Eczema of the head and face

1. Tubotympanitis

Under the heading of tubotympanitis, we must include stenosis of or adhesions in or at the mouth of the eustachian tube, and chronic exudative otitis media with or without adhesions. We must also add the most frequent causes of the tubotympanitis, which are nasal obstruction, chronic sinusitis, hypertrophied and diseased tonsils, and adenoids.

2. Poor Aural Hygiene

By poor aural hygiene is meant the lack of care of the external auditory canal, and, in fact, the carelessness of the individual in permitting water to enter the canal through the external auditory meatus and then not completely drying the canal. We

are all familiar with the fact that when the skin is in contact with water for any great length of time, there occurs an edema of the epidermis, which is followed by subsequent desquamation. It is the edema and the desquamation that produce itching, which in turn stimulates the scratching.

3. Swimming

We make a special heading of swimming to bring this factor out more emphatically. Within the last decade swimming has become perhaps the most popular sport and, like all good things, is abused. Proper precautions are not taken. Primarily, the entrance of the water into the ear is the etiological factor in the production of ear irritation, fresh water swimming as well as ocean bathing being perhaps equally responsible, greater irritation probably being produced by the salt water, with pollution a secondary factor. To those who are susceptible, the chlorinated water in swimming pools is an added evil. We are all quite familiar with the chemical irritants that are introduced by the salt water as well as with the irritation produced by the chlorine (It may be well also to mention here the fact that under-water swimming and improper diving are responsible for the entry of the water into the middle ear by way of the nasopharynx and eustachian tube).

4. Impacted Cerumen

Cerumen may acumulate in the external canal over a period of months or even years without producing symptoms. It is not uncommon to see a fungoid growth on the impacted cerumen. The presence of the impacted cerumen may only become subjective after the wax has been caused to swell by the entry of water into the canal.

5. Vigorous Nose Blowing

Under this heading come those cases of nasal obstruction where the individual habitually blows his nose both frequently and forcefully. In his efforts to obtain relief of his nasal obstruction and difficult breathing, the patient blows his nose violently. It is this increased pressure against a resistant nasal obstruction that forces too much air through the eustachian tube. Sooner or later there occurs a relaxation of the drum membrane and a dilatation of the eustachian tube. This relaxation of the drum membrane and dilatation of the eustachian tube are often a cause of itching of the canals. Then, too, in cases of nasal obstruction with sinus suppuration, nose blowing may force the suppurative secretions into the middle ear.

6. Chronic Suppurative Otitis Media

This group is comprised of cases with a discharge from a chronic suppurative otitis media. The more or less continual moisture in the canal is the source of irritation and canal infection.

7. Presence of Foreign Bodies

Foreign bodies may remain in the ear for many years without producing any symptoms or any local inflammatory reaction. However, sooner or later the foreign body becomes surrounded by cerumen. The foreign body plus the cerumen then assumes the rôle of an irritant and as such stimulates scratching or manipulation by the patient (finger, matchstick, toothpick, hairpin and the like).

8. General Debilitating Conditions

These include diabetes, tuberculosis and senility, and hardly need any discussion, but we must remember that local disturbances as well as general do occur in these conditions. The disturbances are primarily circulatory in origin. In cases of tuberculosis the local condition may be one of dehydration and a local manifestation of a toxemia.

9. Fungoid Growths

Fungoid growths are rarely primary; when they do occur they are secondary growths on the surface of impacted cerumen or contaminations in the simple catarrhal or suppurative eczemas of the canal.

10. Age and Sex

Itching, eczema and furunculosis may occur at any age. Canal irritation and eczema occur more often in women than in men. This is due in a large measure to the insufficient exposure of the ears to air, light and direct sunshine. Then, again, we must not omit the fact that women, as a rule, are more fastidious in their attempts at cleanliness, and canal irritations may appear as a result of over-zealous care.

11. Eczema of the Head and Face

Eczema of the external canal may occur secondarily by contiguity, extension or contamination from a primary focus on the head, face or scalp.

SYMPTOMS AND PATHOLOGY

The symptoms and pathology are so intimately associated that for the sake of

clarity they will be discussed together.

Regardless of the exciting etiological factor the earliest symptoms are a mild irritation and itching in the canal which the patient may be able to ignore more or less for the time being and which may completely disappear soon after the removal of the exciting cause. If tubotympanitis exists, the patient is conscious of a discomfort and itching deep in the external auditory canal. This sense of discomfort may be transmitted and felt on the homolateral border or dorsum of the tongue. In order to obtain relief in these seemingly deeper areas of irritation the patient inserts a toothpick, matchstick, hairpin or finger. With these physical agents repeatedly and forcibly employed, the continuity of the skin is broken. By this trauma the individual causes minute breaks in the epidermis and through these abrasions organisms gain entrance. As we all know, the scratching of the canals soon becomes a habit, but we must qualify this statement by calling it a habit born of necessity. The continued trauma then produces greater irritation with the resulting stimulation of sebaceous and ceruminous secretions. If the original irritant is not removed and the patient's efforts at relief do not cease, the simple catarrhal eczema may go on to the suppurative type, when one sees a purulent discharge, thick and foul smelling, not unlike that seen in a chronic suppurative otitis media. In the more severe or chronic cases of eczema, the drum membrane becomes involved in the inflammatory process. The outer or dermic layer of the drum membrane is derived from the skin lining the canal. Infection rarely enters the middle ear from the canal, the dermic layer of the membrana tympani being apparently highly resistant. The membrana tympani always returns to normal when the canal eczema clears up. It may be interesting to relate briefly at this point the history of a seventeen year old boy who presented himself for treatment for a profuse and foul discharge of both ears. The character and the amount of the discharge were not unlike that of a chronic suppurative otitis media. The etiological factor here was a chronic hypertrophic rhinitis and a chronic tubotympanitis. The irritation had been present for about two years. This condition cleared up in about two weeks under the appropriate treatment.

With the introduction of the micro-organisms by the continued scratching a low grade infection begins and as a result there occur itching and irritation which now may be looked upon as the beginning of a vicious cycle. This vicious cycle begins with an apparently simple canal irritation and may terminate in a most severe perichondritis, the stages being as follows:

1. Canal irritation.
2. Itching
3. Scratching-trauma
4. Traumatic stimulation of sebaceous and ceruminous secretions
5. Infection
6. Infective catarrhal moist eczema
7. Suppurative eczema
8. Suppurative discharge
9. Otitis externa circumscripta (furunculosis)
10. Induration of the skin of the external canal
11. Perichondritis of the canal or the pinna or both
12. Eczema of the face and scalp

The steps in this vicious cycle clarify the pathology, chronicity and the recurrence of furunculosis of the canal as well as the recurrence of the itching and eczema.

●

A brief mention of the local anatomy is in order at this point. The skin is firmly adherent to cartilage; it is a skin which contains ceruminous glands and hair follicles. The first portion of the external auditory canal is composed of skin and cartilage. As the canal approaches the drum the cartilage is replaced by a bony canal wall to which the skin is firmly adherent. With this adherence there need be but mild swelling and apparently simple infection to produce the most excruciating pain of an external otitis. The proximity of the glenoid cavity to the external auditory canal explains why there is such great discomfort and even pain on opening and closing the mouth. When the inflammatory process extends beyond the dermic layer, the perichondrium reacts severely, and it is this perichondritis that is also responsible for the chronicity of the eczema, for cartilage is but poorly resistant to infection.

When we see these patients they have already been using ear irrigations consisting of water and "what not" and in this way have made a bad condition worse by increasing the edema of the skin of the canal plus the desquamation of the epithelium. This moisture and detritus in the canal form an excellent culture media not only for bacteria but also for fungi.

TREATMENT

It has been my experience that the majority of these cases occur in women. The condition is usually exaggerated and the chronicity prolonged in women because the sunlight and air are excluded from the ears by the hair. It is advisable, therefore, to have the patient dress her hair in such a manner that the ears are exposed to both the air and light whenever possible.

The treatment is divided into preventive and curative.

Preventive:

1. Clear up as soon as possible any symptomatic nose or throat conditions which may sooner or later produce tubotympanitis.

2. Caution patients not to blow the nose forcefully.

3. Advise swimmers to keep the ears protected by employing rubber ear plugs, lambs wool or cotton, and bathing cap; to apply lanolin or vaselin at the external auditory meatus before the insertion of the cotton.

4. After the swim, thorough and careful drying of the canal with a soft cotton applicator. If canal irritation already exists, the use of vaselin or other suitable emollient.

5. In the case of one whose skin is sensitive to water and especially to the chlorine in swimming pools, the individual is advised to stay out of the water (Man is not an aquatic animal).

6. Advice similar to the above in taking showers, tub baths, shaving, washing and shampooing.

7. If a general medical condition exists, appropriate measures must be instituted.

Curative:

Cessation of scratching is the keynote. Aqueous solutions and water are to be avoided (wet dressings being indicated only when perichondritis or cellulitis or both are present).

1. For the Itching:

(a) 1 per cent yellow oxide of mercury ointment.

(b) 2 per cent ammoniated mercury ointment.

(c) The combination of the yellow oxide of mercury and the ammoniated mercury (a and b). To this combination may be added (1) resorcin, (2) zinc oxide, (3) salicylic acid, (4) methol or such other ingredients as the occasion demands. The simpler combinations are the better.

(d) Phenol in my experience is never indicated. Even mild phenol ointments seem to have a macerating effect on the skin of the external canal. In most instances the pruritus has been allayed by the aforementioned agents. Occasionally, the various local anesthetic ointments have been employed.

2. For the Eczema:

(a) In the simple catarrhal stage, the eczema is more readily amenable to treatment, the above a, b or c being the ointments of choice.

(b) If crusts are present or if the eczema is in the acute inflammatory stage with hyperemia, applications or a dressing of sterile olive oil exert a soothing effect. After the application of the olive oil (several hours) the ointments suggested above are extremely beneficial. The ointment is applied in the canal as well as over the pinna and the surrounding skin areas, applications being made three or four times a day. No external dressing is necessary. The following combination will be found highly beneficial applied on cotton and allowed to remain with the cotton in the external canal: Resorcin two grains, yellow oxide of mercury five grains, ammoniated mercury ten grains, lanolin and petrolatum equal parts to make one ounce. This ointment is applied as suggested above, both in the canal and around the ear. No external dressing is necessary.

(c) Staphylo-Jel will be found useful, for most of the suppurative cases show on culture *Staphylococcus albus, citreus* or *aureus* or a combination of these. Less often do we find streptococci. However, Staphylo-Jel has a protective action in addition to its local antiseptic value and is applied once daily.

(d) Silver Nitrate 10%: In chronic eczema, silver nitrate carefully applied is both stimulating and germicidal and is a specific for the *Streptococcus haemolyticus* and *Streptococcus viridans.*

3. In Furunculosis:

(a) Incision is necessary in some cases, but is not practiced as frequently as in former years. The medical treatment is usually more satisfactory.

(b) Staphylo-Jel and the ointments mentioned above can be used to advantage here. They may be applied in the canal with or without a wick. The insertion of a cotton or plain gauze wick into the canal is not always possible nor is it well borne by all patients. When possible, a small wick should be used. When the ointment or the Staphylo-Jel is employed, the wick must be

saturated with either of these agents before it is introduced. The canal may be filled to the drum membrane by a cotton-tipped applicator as a ramrod. The saturated wick is then inserted. When the ointment is used one treatment daily is sufficient. The introduction of the wick assures of a continuous medication to the infected areas, keeps the indurated or edematous areas separated, and allays the pain. Keeping the edematous and indurated walls of the canal apart also prevents, in a measure, the auto-infection of one area by the other. Gentleness in the manipulation is paramount, for the pain is excruciating and gentle instrumentation is deeply appreciated by the patient and permits the more effective introduction of the wick. Where, in itching and eczema, the aqueous solutions are to be avoided, in furunculosis they may be employed with great benefit. The medication is introduced by a medicine dropper into the canal on that portion of the wick that protrudes from the external auditory meatus. This wick must be kept moist. This is accomplished by applying the eye dropper method about every hour. The wet dressings are soothing. The pain and discomfort will return when these dressings are permitted to become dry. The solutions that have been found best suited are: (1) argyrol, 15 per cent solution, to which a few drops of glycerine have been added; (2) Burow's solution, half strength; (3) boric acid solution; (4) Thiersch's solution; (5) 1-20,000 potassium permanganate solution.

(c) Vaccines here as well as in other infections must be considered, but hardly as possessing specific powers. There are several stock vaccines on the market that have been employed with good results. The autogenous vaccine is superior to the stock vaccine. The latter may be employed until the autogenous vaccine is prepared.

4. Furunculosis with Induration—Cellulitis—Perichondritis:

These may be considered as further developments, complications or extensions of the local inflammatory process. The treatments mentioned above may also be employed here, depending of course upon the severity and extent of the local condition and one's own judgment. One must realize the seriousness of perichondritis and the possibility of a deformity if suppuration ensues. If the inflammatory reaction is severe, it must be treated as a cellulitis would be treated in any other part of the body.

5. Physical Therapy:

(a) *X-RAY:* Therapeutic doses of x-ray (erythema) may be employed. The x-rays have been found beneficial. However, the rays must be employed with great caution and by one who is thoroughly familiar with not only the value of x-ray but also its dangers. One cannot hurry this type of treatment and it may not always be possible to predict at a glance the dose or the number of treatments necessary. A word of caution as to over-dosage of x-rays is not amiss.

(b) *ULTRAVIOLET:* The cold quartz applicator (Kromayer lamp) has been employed for its local, stimulating and germicidal effect. The ultraviolet radiation has been found beneficial in mild erythema doses. Ultraviolet radiation may be employed to produce exfoliation and stimulation of the epidermis. This type of radiation, of course, can only be employed if the eczema is on the pinna. With these modalities we must again caution against the dangers of over-dosage and over-treatment.

(c) *HELIOTHERAPY:* The value of exposure to fresh air and sunshine is too well known and therefore cannot justify discussion. If repetition will be pardoned, once again a word of caution against over-exposure to the rays of the sun.

(d) *DIATHERMY:* This modality will be found advantageous in stimulating the local circulation and, thereby, healing.

6. Chronic Cases and Recurrences:

If the armamentarium of the family physician has been exhausted, protracted cases and recurrences necessitate closer scrutiny of the status of the ear, nose, throat and eustachian tube. The more highly specialized treatments to the nose, throat or eustachian tube should be left to the rhinologist.

CONCLUSION

Itching of the ears has a diversified etiology which should be definitely determined. In order to obtain the best results, treatment should begin early and be continued until the condition has been completely relieved. Of itself, the pruritus is a discomfort; but if the itching continues, a vicious cycle develops which produces a most discomforting condition and predisposes to chronicity and recurrence. In all the stages mentioned, the etiology will dictate the treatment, which may be protracted in a

great many cases. In treating these patients one must take into consideration the fact that the ear is only one part of the body and that the local pathology may be a manifestation of a general condition. It must, however, be borne in mind that the local ear condition may bear no relation to a general pathological state. The dietary and water drinking habits should be considered. The otolaryngologist should be called in if the case is chronic, the treatment protracted, or if there are recurrences. The armamentarium of the general practitioner may not include facilities for the highly specialized procedures. The treatment is comparatively simple and consists of both local and general measures and sound advice, all dictated by common sense.

ASSOCIATED PHYSICIANS OF LONG ISLAND

114th Regular Meeting at the Huntington Hospital and Crescent Country Club, June 9th. Well Attended.

Halsey B. Knapp Spoke on State Agricultural School and Its Work Of Interest to Physicians.

The 114th regular meeting of the Associated Physicians of Long Island was held in Huntington, Suffolk County, Long Island, June 9th, with the customary good attendance. The president, Dr. Wilbur C. Travis, was ably assisted by Dr. John L. Sengstack in providing an excellent program of short case histories which were competently discussed. A number of members took advantage of the opportunity to play golf all day at the Crescent Country Club while about 20 members were the luncheon guests of the Huntington Hospital. At 2 P.M., groups were taken through the hospital upon an inspection tour, and at 3 P.M., the scientific program was presented in the hospital by members of the staff.

1. Recurrent Biliary Colic Following Cholecystectomy, by Dr. Cyril Drysdale, discussed by Dr. Robert F. Barber.
2. Recurrent Rupture of Gastric Ulcer, by Dr. R. M. Arkwright, discussed by Dr. A. F. R. Andresen.
3. Rupture of the Rectum—Spontaneous, by Dr. Warren Kortright, discussed by Dr. Edward Truesdell.
4. Pyoureter Conservatively Treated, by Dr. Morris Keen, discussed by Dr. Howard Langworthy.
5. Encephalitis with Recurrence, by Dr. Olive Wheaton, discussed by Dr. Thurman B. Givan.
6. Mastoiditis with Lateral Sinus Thrombosis, by Dr. Thomas W. Faulkner, discussed by Dr. Robert L. Moorhead.

In the business meeting, called at 5 P.M. by the president, Dr. Wilbur Travis, it was announced that the next outing would be held October 6th, with a program in Nassau Hospital, Mineola, L. I., and a dinner at Wheatley Hills Golf Club. Dr. Arthur Jaques reported that the New York State Department of Health had just held an institute on syphilis and he urged that this association go on record as favoring the state's campaign of education as a weapon to eradicate syphilis. A motion was duly carried to this effect. The deaths of Dr. Frank DeLano and Dr. Charles Schmuck were reported and the secretary was instructed to send appropriate resolutions to the families. A report of the treasurer, Dr. John J. Masterson, showed a membership of 622. Dr. Charles A. Anderson moved that the by-laws be amended to change Article 11, Section 2, to read as follows: "There shall be a board of eleven directors, consisting of the president, the past three living ex-presidents, the first vice-president, the secretary, the treasurer, the chairmen of the scientific, entertainment and membership committees and the executive secretary ex-officio." This motion was unanimously passed.

●

The customary dinner was held in the golf club house of the Crescent Country Club with 75 in attendance. Mr. Halsey B. Knapp was welcomed as the speaker of the evening. Mr. Knapp is well known on Long Island for his work as director of the New York State Institute of Applied Agri-

—Continued on page 238

Clinical Notes

Suggestions and New Instruments

GONOCOCCUS FILTRATE (Corbus-Ferry) IN THE TREATMENT OF GONORRHEA

WILLIAM FRANCES McKENNA, M.D., F.A.C.S.
PHILIP GOLDFADER, M.D. and
MARK FISHBERG, M.D., Brooklyn, N. Y.

REPORTS commenting favorably on the use of gonococcus filtrate as described by Corbus and Ferry inspired the present study in a group of carefully controlled cases of gonorrhea.

The filtrate appears to have originated from the studies of Clark, Ferry, and Steele, who give their conclusions as follows: "The gonococcus produces an extracellular toxin when grown in a suitable liquid medium. The sterile bouillon filtrate from young cultures contains this extracellular toxin in sufficient concentration to give positive skin reactions in susceptible individuals in dilutons of 1:1000 to 1:1500."[1]

In 1922 Mueller published his observations on the effect of small quantities of non-specific proteins as well as crystalloids injected intramuscularly in gonorrheal urethritis of the male.[2]

Corbus of Chicago, availing himself of these observations, conceived a plan of treating specific urethritis by intradermal injections of specially prepared gonococcus filtrate, the object of which was the establishing of active immunity to the extracellular toxin of the gonococcus.

In 1930 Corbus and O'Connor reported a series of cases treated by this method. They conclude that "The shortest period of treatment which was followed by complete disappearance of the gonococcus from the secretions in the acute and subacute infections in the male was four weeks. In the chronic infections in the male the shortest period was one week. The average time from the initial infection to complete disappearance of the gonococcus in acute urethritis was ten weeks in the male. In chronic infections the period was considerably shorter than in acute cases" (3).

Working independently, Cumming and Burhans report their results as follows: The clinic group (14 cases) was treated successfully with only weekly injections of gonococcus filtrate. They were selected from a group presenting themselves promptly on the appearance of urethral discharge; all were males and all reported regularly, adhering strictly to advice pertaining to general living habits. The infection in this small group remained confined to the anterior urethra in all cases and there were no complications or recurrences (4).

They state further: "The period of time in which organisms were found roughly corresponds to the time of actual active urethral discharge. This varied in a group of private patients from one day to sixteen weeks, and, disregarding one or two instances in which organisms were found only once, averaged five weeks. In the clinic group the range was from three to seven weeks, with an average likewise of five weeks (4).

They also comment, in discussing the value of the filtrate as a test for determining a cure, to the effect that "They have used the gonococcus filtrate in 21 cases as a diagnostic test or to provoke an increased specific urethral discharge as well as to locate dormant infections in the adnexa. They felt that a relatively large dose (from 0.1 to 0.4 cc.) of gonococcus filtrate might activate dormant organisms for a short period, enabling one to make an accurate diagnosis. They have come to be fairly sure that the organisms are not

* From the Urological Department of the Brooklyn Hospital.

present if the local reaction is negative and non-productive of discharge or other returning symptoms (4).

In the study herein reported the technique recommended by the authors and sponsors was carefully followed. The diagnosis of acute specific urethritis was made from a careful history and physical examination, and was in every instance confirmed by a stain-smear. In the ascending stage the patient was given urinary sedatives by mouth, and received weekly injections of the filtrate intradermally, commencing with a dose of 0.05, increased weekly by 0.05. In the period of decline in addition to the filtrate the patient was instructed carefully to use a hand injection of neutral acriflavine or an appropriate silver salt. A leaflet containing detailed advice as to personal hygiene and conduct was also given, and emphasis was given to the need for following implicitly all instructions. Progress was determined by frequent examination of stained smears, appearance of the urines, and general examination at each visit. When all discharge had ceased, and the urine was clear except for occasional shreds, the patient was carefully examined for adnexal involvement. As indicated for stricture, vesicoprostatic or other residua, sounds, massage, or instillations were employed. The standard for final discharge as cured was fairly rigid, including clear urine, absence of discharge, prostate normal to touch, with four to six leukocytes per h.p. field, and failure to provoke gonococcus-bearing discharge on injection of silver nitrate and on the passage of sounds, and finally failure to produce discharge showing relapse after indulgence in alcohol and intercourse (with condom) during a probation period of three months. Following are the tabulated results of this regimen in the group studied.

1	Total cases	34
	Cases under treatment for long enough time to draw conclusions	19
	First infection	21
	More than one attack	13
2	Infection limited to anterior urethra when first seen	10
	Of whom the number developing posterior infection was	7
3	Duration (from onset to first visit)	
	Minimum .....days....	1
	Maximum	210
	Average	19.6

It will be seen that 70 per cent of cases which were anterior when first seen developed posterior complications (see 2 above).

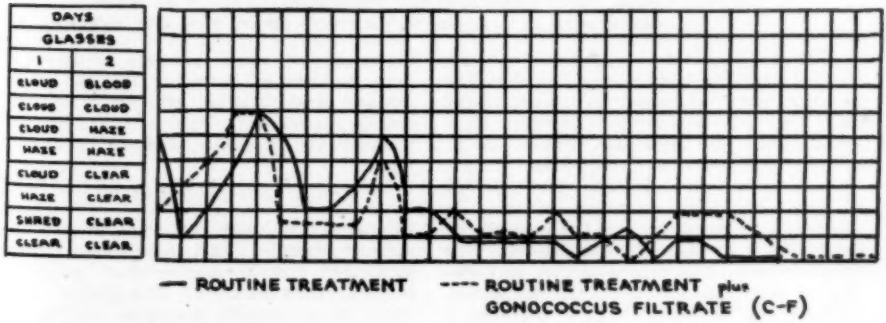
In eleven cases the shortest time in which the gonococcus disappeared was thirty-nine days, and the maximum was two hundred and ten days, with an average of sixty-nine days.

In a smaller group of four cases the minimum was twenty-one days and the maximum was sixty-five days, the average being forty-eight days.

Two cases developed acute epididymitis while under the treatment. As a test of cure the filtrate was unreliable. Several cases gave repeated negative reactions to the filtrate, and gonococci were later provoked by other means.

No case was discharged as cured in less than four months from the time of first visit. In comparing these results with those obtained in a detailed study of stand-

No. 1 GRAPH COMPOSITE OF CASES TREATED

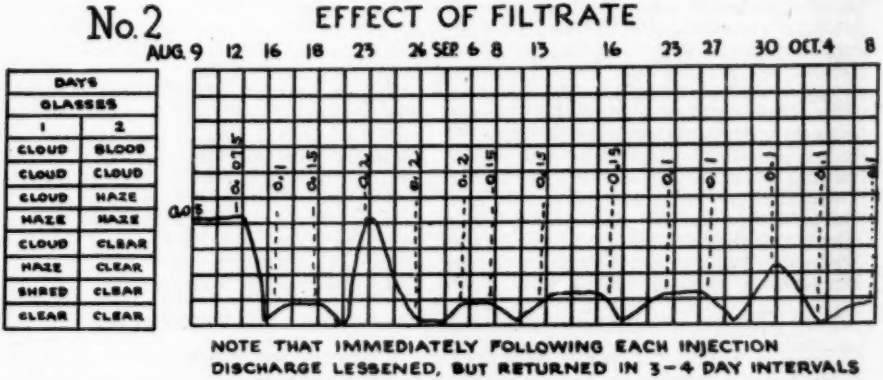


ard dispensary treatment in another series compiled by a member of our clinic (Wehrbein), there is no noticeable difference in favor of using the filtrate.[5]

The following observation is of interest. Following injection of filtrate, especially in the early and small dose period, there was in some cases a dramatically prompt decrease or even cessation of discharge, accompanied by complete clearing of the urine. However, within a very few days discharge containing gonococci and cloudy urine would reappear. The explanation of this phenomenon suggests itself if one recalls the skin reactions and focal manifestations in certain allergic states when specific antigens are injected. The possibility that the auto-anaphylactic phenomenon of Auer may be responsible, in part at least, for this, very much as the absorption of certain cleavage products of bacteria sensitizes the individual in certain allergic states, must not be overlooked. An individual so sensitized may be desensitized by injections of very small doses of a specific antigen or protein. Such desensitization accounts, in the opinion of the writers, for all of the effects of the filtrate.

rational therapy. Further, it should be possible to develop an active and positive immunity by the use of a true toxin. Cutaneous reactions when the result of injection of specific exotoxin do not depend upon protein content, but upon direct protoplasmic poisoning. They vary qualitatively and somewhat quantitatively with the presence of specific antitoxin. Therefore, in an individual who has never had gonorrhea, or who has never been immunized against gonorrhea, injection of the filtrate should produce a skin reaction of marked degree. Injection of filtrate into three people who had never had gonorrhea, or immunization with any gonococcus derivative, showed a reaction of 1 inch x 1 inch to a dose of 0.1 filtrate. In all cases the reaction faded within forty-eight hours, and according to the standard would constitute a negative reaction.

Furthermore, an active immunity produced by the injection of specific exotoxin follows the law of mass action in that, in response to a small quantity of antigen, a large quantity of antibody is developed. Thus, if true immunity were produced by the filtrate, there should be no relapse due to the



NOTE THAT IMMEDIATELY FOLLOWING EACH INJECTION DISCHARGE LESSENED, BUT RETURNED IN 3–4 DAY INTERVALS

That the gonococcus produces a specific, soluble exotoxin with which it is possible to effect active immunity is open to doubt from a purely theoretical standpoint. Most investigators disclaim the production of exotoxin by the gonococcus (Pelouze *et al.*). The method of preparing the filtrate is not of itself proof that only exotoxin may be present, nor does it exclude the presence of the products of bacteriolysis. Further, if a specific toxin be produced in the preparation of the filtrate, it poses the production of a specific antitoxin, which would be a

absorption of small amounts of exotoxin from a focus of infection in the genitourinary tract, whether still active or artificially reactivated. This course is not followed in the reactions produced by the filtrate.

Since the filtrate is the product of gonococcus metabolism, and not the entire toxic substance producing gonorrhea, it does not appear probable that immunization to this particular exotoxin can produce immunity to gonococcus infection. Speculation along these lines presents gonorrhea as the re-

action of the genital mucosa to the products of gonococcal disintegration, acting as irritants, or as sensitizing antigens, while the gonococcus is simply the originating or perpetuating agent.

Prompt and specific cure of gonorrhea has not yet been attained by any single therapy. The dream of a complete destruction of the invading gonococci by some miraculous chemical is cherished no longer except by manufacturers of drugs. The specific immunization hope has thus far not been fulfilled. At present much thought and effort are being devoted to heat therapy, with a reported high rate of cure. Even here the effect need not be direct gonococcal death, since experimentally the gonococcus can withstand higher temperature than the human body. Some undefined process is stimulated during high fever which hastens the tissue reaction to the infection.

Conclusions:

1. Gonoccocus filtrate (Corbus-Ferry) plus routine treatment has not given any better results in our hands than routine treatment alone,

2. Gonococcus filtrate did not prevent complications or lessen their severity,

3. Gonococcus filtrate proved of no value in determining a cure,

4. The effect of injection of small quantities of gonococcus filtrate bears a close resemblance to the effect of specific antigens when similarly used for desensitization in allergic states.

5. The theoretical basis for the use of gonococcus filtrate does not harmonize with the known facts of immunization in general, or of recovery from gonorrhea in particular.

References

(1) Corbus, Ferry, and Steele, Journal of Immunology, 21:233, 1931.

(2) Mueller, Muench. Med. Wochensch, 69:1506, 1922.

(3) Corbus and O'Connor, Journal of Urology, 24:333, 1930.

(4) Cumming and Burhans, J.A.M.A., 104 (Jan. 1935).

(5) Wehrbein, H. L., Urol. and Cutan. Rev., No. 2. 1934.

Miscellany

Marion Sims Type Not Wanted Today

"I confess that I am sentimental enough to be a hero-worshiper and to feel that we can derive inspiration and courage from a re-perusal of the lives of great men. Such study teaches us that dry-as-dust knowledge is not everything. The great physician, the great surgeon must of necessity be more than a scientist or a technician. He must have that something which we call personality and he must have interests outside those of his calling. So it behooves us to take care that our present hidebound regulations for the admission to the study of medicine, and our rigid scientific curricula do not exclude and do not dampen the enthusiasm of some who, if given opportunity, might develop into great clinicians."

—Dr. Benjamin P. Watson
late President
American Gynecological Society.

●

Dysgenic Effects of War

War has been a greater plague to the human race than any of the dreadful scourges, epidemics and plagues that have from time to time swept the populations of the world. These plagues and epidemics tended to kill off the weak and defective rather than the strong and virile. Thus, in general terms, it might be said that they acted as a purge. War, however, works the other way. The entire system of war tends to shelter from its scourge the physically weak, the mental defectives, the neurotics, the diseased and the habitual drunkards. It sends into the fire of battle for potential destruction the young men of all the lands who are the fittest in all respects. War is actually the most effective form of race suicide known to man.

—Major General John F. O'Ryan
in *New York Times*

●

PROTAMINE INSULINATE

One of the major difficulties of endocrine substitution therapy is the duplication of the effects of continuous secretion by intermittent administration. The consequences of underdosage and overdosage are particularly rapid and striking with insulin; this problem is therefore most important in the treatment of diabetes. While the majority of patients are able to adjust their carbohydrate metabolism satisfactorily by the injection of insulin several times a day, many patients with diabetes have so delicately balanced an equilibrium that it is readily

—Continued on page 264

Cancer

Department Edited by **John M. Swan, M.D. (Pennsylvania), F.A.C.P.**
EXECUTIVE SECRETARY, NEW YORK STATE COMMITTEE OF THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER

Assisted by CHARLES WILLIAM HENNINGTON, B.S. (Rochester), M.D. (Hopkins), F.A.C.S., *German Literature Editor*, and UMBERT CIMILDORO, A.B. (Cornell), M.D. (Rome), *Italian Literature Editor*.

THE ENDOCRINE RELATIONS OF CANCER

II—THE ADRENALS

CARRYING on the study of the relation of the organs of the endocrine system to cancer, its development and treatment, we pass from a general consideration of the subject to an examination of the individual glands in the system and their relation to cancer. This subject may be approached from (1) the viewpoint of the symptomatology of malignant tumors in the various organs; (2) the viewpoint of the influence of the injection of the products of the glands into animals with malignant tumors and into those without such growths; (3) the viewpoint of the effects of the removal of the various glands on the development of experimental tumors and on natural tumors.

The adrenals, apparently, are not often the site of primary malignant tumors. In the United States registration area in 1933 there were 1617 deaths from cancer of the kidneys and suprarenals, 1.25 per cent of all deaths from cancer. Of these 915 were in men and 702 in women (1).

In the State of New York in 1934 there were 311 deaths from cancer of the kidneys and suprarenals, 1.77 per cent of all deaths from cancer. Of these 190 were in men and 121 in women (2).

If we assume that these cancers were equally distributed between the suprarenals and the kidneys, the number of deaths from cancer of the former organs will be found to be small.

Burke (3), in a survey of 371 autopsy records, found two instances of primary tumors, 0.53 per cent, and forty-nine cases of metastatic tumors, 13.2 per cent. He says that the adrenal body presents metastases in many cases in which there is no general dissemination. The medulla is more frequently the site of the metastatic growths than the cortex.

In the first contribution in this series we referred to the syndromes set up by adrenal adenomata (4).

Geschickter (5) has studied seventy-two cases of tumors of the adrenal cortex and thirty-three cases of tumors of the adrenal medulla. He divides these growths into benign adenomata, with symptoms and without symptoms; and malignant tumors with and without symptoms.

He found that malignant tumors of the adrenal cortex were accompanied by pronounced endocrine disturbances; sexual precocity in children and sexual inversion in adults. Adiposity, disturbances of sugar metabolism, skeletal changes and polycythemia have been recorded. Mental retardation has been observed in children and psychic disturbances in adults. The Aschheim-Zondek reaction may be positive. Malignant tumors of the medulla are associated with variability of blood pressure, Addison's disease, hyperglycemia and glycosuria, and hyperthyroidism with asthenia.

Tremoliérès, Tardieu, Carteaud and Normand (6) divide cancer of the suprarenals into four groups: 1. Tumors that are accompanied by an endocrine syndrome, such as suprarenal insufficiency or suprarenal virilism; 2. Tumors that produce an evident abdominal mass accompanied by variable signs of compression; 3. Tumors that are accompanied by continuous or paroxysmal hypertension; 4. Tumors that are marked by the presence of multiple metastases.

The authors report the case of a man,

aged 51 years, who presented multiple metastases. The primary tumor was not found clinically, and arterial hypertension was absent. The metastases developed rapidly; there was marked adynamia and fever. The latter symptom was thought to be the result of dissemination of the neoplasm and of tissue disintegration.

Ewing (7) pointed out that medullary chromaffin cell tumors of the adrenal body contain a large amount of adrenalin and are associated with a syndrome characterized by arterial hypertension, glycosuria, and sympathetic nervous instability. Also that in certain cortical advanced tumors there is marked disturbance of the sexual characters with hirsutes, pseudohermaphroditism, precocious development of the external genitalia and obesity.

Lyall (8) has reported a case of primary carcinoma of the suprarenal cortex associated with hypertension in a woman, aged 30 years.

●

Hill and McGee (9) report a case in which there was a retroperitoneal tumor containing aberrant adrenal tissue.

Eckardt (10) reports a case of tumor of the suprarenal medulla in a child, characterized by indefinite and insidious onset, increasing cachexia, progressive anemia, tachycardia, and metastases to the bones.

Donaldson and Howard (11) report a case of primary carcinoma of the adrenal cortex in a woman, aged 40 years. Death was the result of pulmonary metastases. The patient had been treated for persistent vaginal bleeding. The pathologic report of material obtained by curettage was: Severe hyperplastic endometritis with diffuse polypoid cystic glandular hyperplasia, but no evidence of malignancy.

Woglom (12) repeated the experiments of Arloing and others (Fernand Arloing, A. Josserand and J. Charachon. *Compt. rend. Soc. de Biol.*, April 19, 1929. 100:1035) by injecting tumor bearing mice with the products of the cortex of the suprarenal bodies of rabbits that had previously been treated with the strain of tumor obtained from tumor bearing mice. Other tumor bearing mice were treated with suprarenal cortex from normal rabbits. In some instances fragments of the suprarenal cortex were injected; in other cases a glycerin extract was employed. Woglom could discover no real inhibition of growth of the two tumor strains used in his experiments. He thought that an occasional tumor such as that employed by Arloing might perhaps be influenced in its growth but felt that any treatment so narrowly restricted would hardly be a fruitful subject for extended study.

Roffo (13) has studied the development of inoculated tumors after treatment with injections of extracts of the cortex and of the medulla of the suprarenals both with and without epinephrin. He found (1) that lipoids from the suprarenal cortex without epinephrin have a more favorable action on the development of tumors, more so than proteins from the cortex without epinephrin. (2) Lipoids from the medulla without epinephrin have a favorable developmental action on inoculated tumors, as do proteins from the medulla without epinephrin. (3) Lipoids both from the cortex and the medulla have a more marked carcinogenic action if they retain their epinephrin. (4) Lipoids from the medulla have a more marked carcinogenic action than lipoids from the cortex, both with and without epinephrin.

Sugiura and Benedict (14) conclude that the therapeutic value of epinephrin for the treatment of cancer is limited to local application. The experiments were made on rats with the Flexner-Jobling rat carcinoma and the Rous chicken sarcoma. The injections of epinephrin were made into and around the tumor, subcutaneously at a point at a distance from the tumor, and *in vitro*. They found that the development of small tumors was completely inhibited when the injection was made into the tumor; but that large tumors were "seldom beneficially affected by repeated injections."

●

Gruhzit (15) experimented with albino rats inoculated with Flexner-Jobling carcinoma and Jensen sarcoma. He employed extracts of the suprarenal cortex with both high and low epinephrin content. He found no delay in the growth of carcinomata nor in their regression in the treated compared with untreated animals or with those treated with a nonspecific protein extract of ox testis. Injection of the extracts of suprarenal cortex did not prolong the life of the tumor bearing animals. There was no influence on the Jensen sarcoma following the injection of extracts of suprarenal cortex with the high or low epinephrin content.

Ghiron (16) has found that an enzyme produced from the spleen and the adrenal

tissue will inhibit the growth of sarcoma in rats and will even cause retrogression.

Meyer and McTiernan (17) have found that with the exception of thyroxin and insulin no hormone administered to mice harboring transplanted tumors has any demonstrable effect on tumor development.

Sugiura and Benedict (18) reported studies concerning the influence of hormones and endocrine organ extracts on the growth of carcinoma, sarcoma and melanoma in animals. They employed animals with the Flexner-Jobling rat carcinoma, Jensen rat sarcoma, Sugiura rat sarcoma, Bashford mouse carcinoma No. 63, Twort mouse carcinoma, Gye mouse sarcoma No. 37, a transplantable mouse melanoma, and Rous chicken sarcoma No. 1. With epinephrin and with aqueous, alcoholic, and ether and glycerin extracts of sheep and cattle suprarenal cortex, repeatedly administered subcutaneously or intramuscularly, there was no curative or retarding influence on the growth of the transplanted tumors, and no demonstrable accelerating influence on tumor growth. This paper contains an extensive bibliography.

Karnicki (19) found that extirpation of the suprarenal glands inhibited the development of tar cancer of the ears of rabbits and slowed their growth.

Meyer and McTiernan (17) found that the "removal of the glands of internal secretion which we have studied prevent the usual rapid growth of sarcoma."

SUMMARY

Primary tumors are rare. Malignant tumors are accompanied by symptoms referable to the reproductive cardiovascular system and by metastatic changes. The injection of extracts of the adrenal bodies into animals with malignant tumors produces no uniform inhibition of the growth of tumor transplants.

Two observers are of the opinion that the removal of the adrenals "prevents the usual rapid growth of sarcoma."

REFERENCES

1. Bureau of the Census, Mortality Statistics, 1933, pp. 486 and 488.
2. Fifty-fifth Annual Report of the Department of Health, State of New York, for the year ending December 31, 1934, p. 36.
3. E. M. Burke. Amer. Jour. Cancer, February, 1934, 20:338.
4. Medical Times and Long Island Medical Journal, April, 1936, 64:115.
5. Charles F. Geschickter. Amer. Jour. Cancer, January, 1935, 23:104.
6. F. Tremoliéres, A. Tardieu, A. Carteaud and E. Normand. Bull. et Mem. Soc. Med. des Hop., April 28, 1930, 54:710.
7. James Ewing. Jour. Med., (Cincinnati), March, 1935.
8. Alexander Lyall. Brit. Med. Jour., February 23, 1935, 1:354.
9. Frederick C. Hill and J. W. McGee. Amer. Jour. Surg., February, 1935, 27:357.
10. F. Eckardt. Monats. f. Kinderheilkunde, November 27, 1934, 61:127.
11. S. W. Donaldson and S. C. Howard. Amer. Jour. Cancer, May, 1935, 24:75.
12. William H. Woglom. Jour. Amer. Med. Assn., August 16, 1930, 95:473.
13. A. H. Roffo, Prensa Med., Argentina, October 30, 1930, 17:776.
14. Kanematsu Sugiura and Stanley R. Benedict. Jour. Cancer Research, October, 1930, 14:487.
15. O. M. Gruhzit. Ann. Int. Med., June, 1931, 4:1589.
16. V. Ghiron. Zeit. f. Krebsforsch., July 22, 1933, 39:358.
17. Ovid O. Meyer and Claire McTiernan. Amer. Jour. Cancer, January, 1934, 20:96.
18. Kanematsu Sugiura and Stanley R. Benedict. Amer. Jour. Cancer, July, 1933, 18:583.
19. W. Karnicki. Zeit. f. Krebsforsch., February 20, 1932, 35:523.

EFFECT OF EPHEDRINE ON EMPTYING TIME OF HUMAN STOMACH

EDWARD J. VAN LIERE, DONALD H. LOUGH and CLARK K. SLEETH, Morgantown, W. Va. (*Journal A. M. A.*, Feb. 15, 1936), found that under carefully controlled conditions ephedrine sulfate in therapeutic doses, 1 grain (0.065 Gm.), prolonged the emptying time of the stomach in six healthy young male subjects. In the case of two individuals, gastric evacuation was prolonged over 118 per cent. In no case was the prolongation less than 72.8 per cent. The average prolongation for the six individuals was 91.66 per cent.

●

ASSOCIATED LONG ISLAND PHYSICIANS

—Continued from page 231

culture in Farmingdale. He outlined the history of the institute and described some very new work of interest to physicians. The institute is investigating the pathology and bacteriology of some of the diseases of chickens, turkeys and ducks, notably the cholera types. Just recently the large duck farms down in Eastport, Moriches and Speonk have had an epidemic of a queer form of paralysis which is decimating the flocks and bankrupting the duck raisers. Autopsies are being made in the Farmingdale institute and they are attempting to devise a vaccine or serum to combat the malady.

NEXT OUTING of A. P. L. I.
October 6th
WHEATLEY HILLS GOLF COURSE
East Williston, L. I. and
NASSAU HOSPITAL, MINEOLA

Economics

Department Edited by Thomas A. McGoldrick, M.D., LL.D.

ORGANIZED MEDICINE
VERSUS
ONE PUBLIC UTILITY CORPORATION

THERE are conditions and circumstances under which medical service is only obtainable under contract: Sparsely settled communities, wide agricultural areas, groups of people too small in number to need or to support a nearby physician, industries in isolated parts of the world, occupations of special hazard to life, mining companies and logging camps compelled to secure medical service under contracts. Such contract work may be strictly ethical and deserve unfavorable criticism from no person. If it be an honest attempt to secure good and sufficient care not otherwise procurable, and at just remuneration, it merits commendation. If, however, a contract to secure, or to render, medical care has for its principal purpose the lowest possible cost in money, then judgment and experience acquired over the years require that it be sternly condemned. It matters not that it is a business corporation hoping thus to conceal, or partly adjust, its low wages; a hospital trying to meet expenses by commandeering the services of its professional staffs; a single doctor, or a group, offering services on a strictly competitive monetary basis and in which quality is not the prime motive—all are to be denounced.

●

It would seem at first thought as if all business men—all executives—knew that the lowest priced products are not always the best nor the least expensive and that though certain goods "get by" for a time, the real values and results will ultimately be revealed. It would seem unnecessary to tell business men that these facts also apply to matters of health and life in the case of human beings, and yet it took many years of experience before the representatives of insurance carriers in the State of New York learned and admitted freely that the medical services which they secured for compensation cases at the lowest prices had proved the most costly and that avoidable permanent disabilities had offset all profits.

●

Nearly one year ago representatives of 45,000 employees of our largest public utility corporation sought medical contracts with the hospitals of New York City. There was no dearth of physicians. Hospitals enough there were and in fair proximity to all sections. The reason—and the only reason—a contract was sought was that a great proportion of these employees received wages of less than a comfort level. Despite full time work these people secured less wages than could purchase for them the necessities of life or any medical care when sick, hence some plan to secure care at some very low price. Under a properly conducted mutual benefit plan complete good care could be assured for all needing it at trifling annual expense to each person and with just payment to hospital and physician, but just payment was not an impelling motive. Under the contract one hospital in each borough would receive all the employees in that borough needing hospital care, though it did not matter in what part of the 317 square miles of New York City the employee lived or worked, nor how urgent his need. The selected hospital would be paid $4.00 per day for all the hospital facilities. At two of these selected borough hospitals a certain doctor or doctors was to be paid something and for the doctors of a third hospital the hope for future payment was devoutly expresed. In no case were the rates of payment to equal those usually paid in the community for like services to patients in similar social condition, and in all cases they were lower than those paid under the Workmen's Compensation Act. As an example, the fee to be paid at one hospital to the doctor for patients with

medical ailments such as pneumonia, acute cardiac, nephritic, or meningeal diseases, or any other medical ailment, would not exceed ten ($10.00) dollars a week.

The Medical Society of the County of Kings quickly grasped the situation in Brooklyn. Many conferences were held by it with the medical staff and trustees of the selected hospital and of other hospitals and the views of the profession submitted. After full consideration the trustees (regents) of the selected hospital abrogated all contracts and declared that contract patients would be admitted only as private patients. The attending staff on its part decided that the fees charged any patients under contracts would be not less than those charged under the Workmen's Compensation Act. These decisions are in accord with the rules adopted by the County and State Medical Societies. The action of this hospital, after study, was exactly what was expected from the College Hospital with the high ideals and motives known to be possessed by it. Despite the offer made by the industrial group to restrict all its work to one hospital, negotiations are now under way with others, but it is believed that no ethical hospital in Brooklyn will be seduced by the possibility of increased business and money. The Hospital Council, speaking for most of the hospitals of Brooklyn, has recorded itself in opposition to any present plans of contract work and in full accord with the principles enunciated by the Medical Society of the County of Kings on that subject.

A phase of special interest in contract medical work is the domiciliary and ambulant patients' care. These patients may not have the choice of a physician. They must accept the physician selected and sent to them by lay superiors and who have been engaged by such superiors with a main purpose of securing the least expensive service. Conference with officials of these employee organizations confirmed this fact. One official (lay) speaking against free choice of physicians and for doctors engaged by his group, dramatically expressed the views of that group by placing his thumb hard on his desk, slowly screwing it around as into the wood, while he said "We want the doctors under our thumb and we intend to keep them there." Such groups rehearse all the old exploited arguments against the free choice of physicians —the possibility of dishonest practitioners, the danger of padded bills, excessive prolongation of treatment, inefficiency, incompentency—all of which reduce themselves to the common denomination of money cost. Discussions of good medical care and its importance were tolerated with impatience. Experience of others, records of insurance companies, action of New York State Legislatures bear neither weight nor value. How unwise they are and how sound the stand of the profession has recently been again confirmed by the report of the Spaulding Bakeries Plant of this State[1]. For the past three years this company fund has permitted the employee free choice of his physician. Prior to that time they had selected the physician. Dr. Bloom in his report vouches for the successful operation of the present method and states that free choice, in contrast to the former way, has brought far better care to the patient, more satisfaction to employers as well as employees, and much less total cost to the Fund. The people in the Fund are not restricted to a small geographic area but are spread over four small cities, and two neighboring corporations have approved and adopted the plan.

Mr. Justice Shientag[2], of the New York Supreme Court, in a recent decision (June, 1936) declared that "this new provision granting free choice to the employee is a salutary one, since it was the absence of such right that gave rise to so many abuses under the old law."

Economic principles approved by the medical societies, having to do with choice of physician and contract practice, are steadily meeting with increased appreciation. They should and will be aggressively and persistently supported by the power of organized medicine in County and State, so that their beneficient results may be ultimately shared by the people, by industry and by the medical profession.

[1] J.A.M.A. 106, 23 June 6, 1936.

[2] Szold vs. Outlet Embroidery Supply Co., Inc.

DECREASING PREVALENCE OF SYPHILIS IN MASSACHUSETTS

N. A. NELSON, Boston (*Journal A. M. A.*, Jan. 11, 1936), states that evidence of a decreasing prevalence of syphilis in Massachusetts is available from three major sources: (1) from reports of antepartum clinics, (2) from monthly reports of syphilis clinics, and (3) from reports by clinics, physicians and institutions to the Massachusetts Department of Public Health.

Contemporary Progress

EDITORIAL SPONSORS

MALFORD W. THEWLIS.....*Medicine*
Wakefield, R. I.
CHARLES H. GOODRICH.....*Surgery*
Brooklyn, N. Y.
OLIVER L. STRINGFIELD.....*Pediatrics*
Stamford, Conn.
VICTOR COX PEDERSEN.....*Urology*
New York, N. Y.
HARVEY B. MATTHEWS
Brooklyn, N. Y. *Obstetrics-Gynecology*
HAROLD HAYS *Nose and Throat-Otology*
New York, N. Y.
WALTER CLARKE
New York, N. Y.
Public Health including Industrial Medicine and Social Hygiene
NORMAN E. TITUS.....*Physical Therapy*
New York, N. Y.
ELLICE MURDOCH ALGER ....*Ophthalmology*
New York, N. Y.
HAROLD R. MERWARTH.....*Neurology*
Brooklyn, N. Y.

Medicine

Calcium and Protein Studies In Malignant Disease

● R. O. BOWMAN, H. C. PITTS and OTHERS (*Canadian Medical Association Journal, 34:527-532, May, 1936*) note that the clinical experience of one of the authors (H. C. P.) has convinced him that intensive calcium therapy aids in the treatment of malignancy. Studies of the blood calcium reported in this article show no calcium deficiency in patients with malignant growths as compared to normal persons or patients with other diseases The calcium content of blister fluid, however, indicates that there may be a calcium deficiency in the tissues in cases of malignancy, which is apparently due to a decreased protein content of the body fluids. No significant difference in the urinary excretion of calcium on a low calcium diet was found in cancerous patients as compared with others. These findings give no proof "that the body cells of cancerous cases are not deficient in electrolytes."

COMMENT

Behan, of Pittsburgh, has been working on this problem. In the Transactions of the Am. Thera. Soc., 1931, pp. 44-56, *Behan pointed out that calcium therapy in inoperable cancer not only made the patient's life more bearable but the patient's mental condition improved and frequently the growth of the cancer was retarded and in some cases seemed to be totally controlled. He gives calcium lactate by mouth or the chloride or gluconate intravenously. By mouth much larger doses are required and there is a tendency to acidosis. Vitamin D should be given to cancer patients. In the* Am. J. Surg., *new series, 17:242:Aug., 1932, Behan shows that calcium acts by decreasing cell permeability and diminishing the sensitivity of nerves and nerve centres. Calcium gluconate, 2.0 gm. orally, three times a day, was given.*

M. W. T.

The "Depot" Treatment of Pernicious Anemia

● R. M. MURRAY-LYON (*Edinburgh Medical Journal, 43:329-333, May, 1936*) has found that the chief difficulty in the treatment of pernicious anemia is insuring a sufficient intake of whole liver or liver extract to maintain the patients' blood at a satisfactory level after they leave the hospital and return to their usual routine. In some cases it is necessary to give liver extract by intramuscular injections in such amounts as to establish a "depot" for slow absorption. The dosage and the interval between injections must be established for each patient by the method of "trial and error." Patients admitted to the hospital with a red cell count of under one million may subsequently require less frequent injections than patients who were much less ill on their first admission. The intervals between injections vary from three to six weeks. One illustrative case is reported in which oral therapy had proved unsatisfactory for maintenance after a trial of seven years, and the patient is doing well under the "depot" method of treatment, although now seventy-five years of age. Seven other cases of typical pernicious anemia and one case of macrocytic anemia following pregnancy have also been satisfactorily main-

tained in good health with red cell counts between 4.5 and 5.5 millions by this method.

COMMENT

The question is entirely one of adequate dosage. In amebiasis, however, Faust and Swartzwelder (Proc. Soc. for Exp. Biology and Med., *1936, 33, 514-518*) *have shown that liver extract intramuscularly failed to control the amebic infection, while oral administration prevented the infection from "getting out of hand." Murphy* (Am. J. Med. Sci., *191:597: May, 1936*) *has pointed out that concentrated liver extract in one c.c. ampoules, each one derived from 100 grams of liver, works satisfactorily when given intramuscularly. It is less disturbing to the patient than the 10 c.c. dose. Many clinics still use this 10 c.c. dose. Some patients require more liver than others and each one must be studied individually. The important thing is to give enough liver extract. Murphy concludes: "because of its high degree of efficiency, ease of administration and reasonableness of cost, in consideration of its effectiveness, this extract is the ideal one for use."*

M. W. T.

Some Biochemical Factors of Heart Failure

● G. HERRMANN, G. M. DECHERD, Jr., and E. H. SCHWAB (*Southern Medical Journal, 29:386-394, April, 1936*) have found in their chemical studies of human heart muscle that low creatine values are characteristic of cardiac failure, and that the lowest concentrations of glycogen and creatine are found in the heart muscle from infarcted areas. In experiments on dogs and rabbits, in which myocardial infarction was produced, the infarcted muscle showed marked loss of glycogen and creatine. Experimental myocarditis in rabbits also caused a diminution in the creatine of the heart muscle. In moderate degrees of work hypertrophy of the rabbit's heart resulting from experimental aortic lesions, there was a relative and an actual increase in the cardiac creatine; as the grade of the hypertrophy increased, there was a drop in the relative creatine values, although the actual content remained high. Digitalization of normal animals (rabbits) increased the creatine content of the heart muscle. In animals with cardiac work hypertrophy, digitalization kept the relative creatine percentage high. The authors conclude that heart failure is a matter of disturbed glycogen-phosphocreatine metabolism in the cardiac muscle.

COMMENT

An open question. Just what part cholesterol metabolism plays in the cause of myocardial degeneration is a question. It would seem that it is an important cause of this condition. Is it the primary cause? Are these low creatine values secondary to some other chemical change? These experiments were on rabbits; so far the coronary changes resulting from high cholesterol feedings, in rabbits, have not been duplicated in humans. It is doubtful if these experiments on rabbits could be made the basis of definite conclusions on humans.

M. W. T.

Heterophile Pneumococcic Serum in the Therapy of Lobar Pneumonia

● J. F. NOBLE and F. E. KIBLER (*Minnesota Medicine, 19:205-214, April, 1936*) report the treatment of 50 cases of lobar pneumonia with heterophile pneumococcic serum at the Ancker Hospital, St. Paul, Minn. This heterophile serum contains the usual protective antibodies developed in the horse against types I and II, and antitoxic substance produced by the injection of filtrates of broth cultures of types I, II and III and group IV pneumococci. In addition the native heterophile antigen is extracted from the horse antipneumococcic serum by the addition of a small amount of heterophile antibody rabbit serum; the horse serum is then reinforced by the addition of a certain number of heterophile antibody units of immune heterophile rabbit serum. For type I and II pneumococcus infections this serum contains specific antibodies; for infections with other types, its value depends chiefly on its non-type-specific antitoxin and the heterophile antibody. This serum was used in the treatment of 50 out of 146 cases of lobar pneumonia admitted to the hospital between November 1, 1934 and June 1, 1935. The mortality in the 50 serum cases was 18 per cent., and in the 96 cases not treated with serum 39.5 per cent. The two series are not entirely comparable, as the group not treated with serum contained a larger percentage of patients over sixty years with a high mortality rate. Comparing the mortality rates for cases under sixty years of age, those treated with serum showed a mortality of 16.7 per cent., and

those not treated with serum a mortality of 29.2 per cent. The authors are of the opinion that the mortality in the older group might have been reduced with the use of serum. Only 30 of the cases treated with serum were typed; of these 11 were of type I, one of type II, and 18 of group IV; 3 of type I and 2 of group IV cases died. In the serum treated cases, empyema was the only serious complication; 7 patients or 14 per cent. developed this complication. In serum treated cases hospitalized within forty-eight hours of onset, the mortality was 10 per cent., while in cases not treated with serum hospitalized in the same period, it was 34.3 per cent. In 25 of the 50 cases, definite clinical improvement, especially a decrease in dyspnea, cyanosis and signs of toxicity was noted following administration of the serum; 14 showed moderate improvement; 6 slight improvement, and 5 no effect of the therapy. These results seem to the authors to be sufficiently encouraging to warrant further trial of the serum.

COMMENT

Interesting. Much more study will be required. It is necessary to study several thousand cases of pneumonia before drawing definite conclusions. The great difficulty is to give any treatment early enough.

M. W. T.

Aluminum Hydroxide as an Antacid in Peptic Ulcer

● W. L. ADAMS, I. H. EINSEL and V. C. MYERS (*American Journal of Digestive Diseases and Nutrition, 3:112-120, April, 1936*) report a study of the effect of aluminum hydroxide used in the treatment of peptic ulcer on the gastric acidity and blood chemistry. A colloidal aluminum hydroxide has been used in the treatment of over 125 cases of peptic ulcer by one of the authors (I. H. E.) in the past few years. The aluminum hydroxide cream was given usually in doses of 4 c.c. six times a day. In all the cases treated, burning, nausea and pain were markedly relieved within a few days, food could be taken without distress and weight gradually increased. A study of 7 typical cases was made with repeated gastric and blood analyses. It was found that there was a decrease in the total amount of acid and of the free acid in the gastric secretion in ninety minutes after the administration of the aluminum hydroxide; as the use of the drug was continued there was a progression toward a lower level of acidity. This reduction of gastric acidity was most marked in those cases with initial hyperacidity. Histamine injections elicited high acid concentration even after the antacid had been given for months; and if the dosage was reduced, there was a tendency toward increase in the gastric acidity. These findings indicate no permanent damage to the secreting mechanism. Blood analyses showed that no significant changes occurred in the serum chloride, total base or carbon dioxide content in patients receiving aluminum hydroxide for a period of several months. Such minor changes as were demonstrated showed a tendency for the total chlorides to rise and the carbon dioxide to fall, *i.e.*, away from alkalosis. Judging from the clinical results obtained with aluminum hydroxide in the treatment of peptic ulcer, and from these laboratory findings, the authors conclude that "colloidal aluminum hydroxide is the most satisfactory antacid thus far employed."

COMMENT

It seems important to note that in these experiments the authors found that there were no significant changes in the blood chemistry following the use of aluminum hydroxide. No doubt considerable damage can be done through the indiscriminate use of alkalis in the treatment of peptic ulcer, especially in those who are sensitive to this type of medication. Wilkinson and Jordan (Am. J. Dig. Diseases and Nutrition, *Sept., 1934*) *point out that the intensive use of alkalis occasionally causes "alkalosis"—headache, dryness of the mouth, mental depression, nausea, vomiting, stupor and severe coma. These authors used the sulphate clearance test as an indicator of renal function. They found suggestions that there is evidence of renal damage in a large proportion of cases of duodenal ulcer. Moreover, Jordan and Kiefer have shown that there is a clinical association between alkalosis and hypertension, arteriosclerosis and chronic vascular nephritis. This tends, they believe, to show that there may be a pre-existing renal insufficiency in those cases which develop alkalosis as a result of alkaline therapy. If aluminum hydroxide gives relief as an antacid and does not produce alkalosis, it is a valuable addition to therapy.*

M. W. T.

Diagnosis of Carcinoma of the Stomach from a Fragment of Tumor Obtained During Gastric Analysis

● L. G. JEKEL (*Journal of Laboratory and Clinical Medicine, 21:836-838, May, 1936*) reports a case in a man fifty-six years of age with symptoms of six months' duration, in which the X-ray examination did not show the presence of a tumor conclusively, and in which the diagnosis of gastric cancer was made by histological examination of small masses of tissue removed with the gastric contents in the course of a gastric analysis. The author finds no similar case reported in American literature since 1907. In this case the diagnosis was made too late for successful operation, but the author is of the opinion that this method for the diagnosis of gastric carcinoma should not be overlooked, as there is a possibility of early diagnosis in this way. X-ray studies are a necessary part of any thorough gastro-intestinal study, but even in the hands of an expert, the findings may be indefinite or inconclusive. Too much dependence should not be placed on the X-ray examination to the neglect of other methods. Gastric analysis is a simple and inexpensive procedure that can be done in the office and is often of aid in clearing up obscure cases. Since normal gastric mucosa can be obtained through the stomach tube, tissue from an early cancer may also be obtained in this way, and careful examination of any tissue obtained in the course of gastric analysis should always be made.

COMMENT

This seems to be an extremely valuable method. By the time x-rays show cancer of the stomach the disease has progressed quite far. We need some other method to assist in the diagnosis of this disease. However, it would seem that it might require several examinations in some cases before any tissue could be obtained.

M. W. T.

●

Surgery

Anesthesia and Blood Lipids

● E. M. BOYD (*Surgery, Gynecology and Obstetrics, 62:677-688, April, 1936*) notes that the effect of anesthesia on the blood lipids has been studied chiefly in animals, and less frequently in man. He has made a study of the blood lipids in 20 cases of minor gynecological operations involving little blood loss, under nitrous oxide-ether anesthesia. In the first eight to ten hours after the anesthesia, there was a lipopenia, or decreased concentration of blood lipids. This lipopenia was found to be due to a decrease in neutral fat in both plasma and red cells, and a decrease in the phospholipid of the red cells. In twenty-one to twenty-seven hours after the anesthesia, this lipopenia was followed by a lipemia, which was due to a marked increase in the neutral fat of the red cells, a definite, though less marked, increase in the phospholipid of the red cells, and a slight and more variable rise in the ester cholesterol of the red cells. The author calls attention to the fact that both the lipopenia and the lipemia in these cases were due primarily to changes in the red cells; he believes that it is the first record of a lipemia due to the changes in the red cells alone. During the lipopenic period the plasma free cholesterol increased, while the ester cholesterol of the plasma did not increase, which suggests that anesthesia affects sterol metabolism "independently of its effect through the intermediary of lipid metabolism."

COMMENT

These conscientious studies mark advance in our comprehension of the complexity of chemical changes in the blood following anesthesia. Impressive!

C. H. G.

Prevention of Gas Pains

● L. E. MAHONEY (*American Journal of Surgery, 32:272-276, May, 1936*) notes that gas pains are the most distressing of usual postoperative complications. Proper preparation for operation and gentle operative manipulations are of great importance in preventing this complication. Another important factor is the postoperative treatment and diet. From his study of the problem, the author has become convinced that the hospital liquid diet allowed surgical patients is a "semistarvation" diet and favors proliferation of putrefactive and gas forming bacteria. For this reason he has adopted a postoperative regimen which he recognizes "runs counter to the bulk of surgical teaching," but which has given satisfactory results in more than 300 laparotomies for various pathological conditions.

Under this regimen, water is given in such amounts as the patient may desire as soon as the nausea has disappeared, usually two to four hours after operation in cases operated under ether, and one to two hours with ethylene or spinal anesthesia. A liquid diet is not employed, but solid food is given by the day after operation, and in some cases the evening of the day of operation. Sufficient morphine or pantopon to control pain is given for the first two or three days; and after the first night a sedative is given at night to aid sleep and reduce the amount of opiate needed. Some adjuvant to furnish bulk and retard bacterial growth, thus combatting intestinal stasis, is indicated; and for this purpose mineral oil in agar is employed. An ounce of this mixture is given three times daily after meals until the bowels move, usually by the third day; then the dosage is reduced to produce one or two bowel movements daily without leakage. By this means, the use of enemata is obviated or greatly reduced. When water and solid food are given, there is much less need for the administration of saline and glucose solutions by intravenous, intramuscular or subcutaneous routes. Patients are encouraged to move about in bed and help themselves as much as possible. This early muscular activity, it is thought, promotes peristalsis; and it also has an excellent mental effect. With this regimen the author has found that patients do not suffer from gas pains, have a good appetite, show less loss of weight, and make a rapid recovery.

COMMENT

Here are numerous rebellions against habitual standarized surgical habits in after treatment. The author's observation has covered a sufficient number of cases to cause us to look and listen. Some trial of his methods might be safe—and cheering to the patient.

C. H. G.

Intraperitoneal Use of Amniotic Fluid

● J. R. Gepfert (*American Journal of Surgery, 31:40-44, April, 1936*) reports the intraperitoneal use of amniotic fluid as described by H. L. Johnson (See abstract *Medical Times*, April, 1936, p. 121), in 50 out of 100 laparotomies at the Gynecological Service at Bellevue Hospital, New York City. The fluid was heated to 100° F. and introduced into the peritoneal cavity through a funnel just before the last peritoneal suture was tied. The amniotic fluid was used in the cases showing the most marked pelvic pathology. Postoperative nausea, vomiting, distention and gas pains were reduced by this method, as compared with the control cases; and the postoperative convalescence was definitely "smooth" and more rapid. The optimum amount of fluid to be employed was found to be 400 c.c. in the average case; it should not be used if the presence of pus is suspected at the time of operation.

COMMENT

Definite corroboration of Johnson's observations.

C. H. G.

Effects of Removal of a Functioning Gallbladder

● G. S. BERGH, P. SANDBLOM and A. C. IVY (*Surgery, Gynecology and Obstetrics, 62:811-814, May, 1936*) report a study of the effects of removal of the gallbladder in normal dogs. Eleven animals were operated on and kept under observation for nine and a half to fifteen months. During the period of observation various liver function tests were made. At the close of this period, the intramural sphincter resistance was measured in each animal by the method of Elman and McMaster, the animals killed and the biliary system removed and examined. All the animals remained in excellent health, and gained weight on the ordinary stock diet. None of tests employed showed any impairment of liver function. Microscopic examination of the postmortem liver sections, as compared with control specimens (removed at the time of the gallbladder operation), showed "slight exudative inflammatory changes in the periportal areas." Eight of the eleven dogs showed definite dilatation of the extrahepatic biliary ducts; in these animals there was a diminished intramural spincter resistance as compared with the other dogs. This indicates that the pressure transmitted into the common duct from the duodenum as a result of incompetence of the spincter of Oddi may be an important factor in the production of dilatation of the biliary ducts after cholecystectomy. The authors are of the opinion that the hepatitis that follows cholecystectomy is so slight that it is "probably of no clinical significance;" a

pre-existing hepatitis may possibly be exaggerated. They also maintain that if the gallbladder is so injured by pathological processes that it does not visualize with the Graham-Cole test a "functional cholecystectomy" has already been performed, and surgical removal of the organ will cause no further physiological change or damage, while, if the gallbladder is infected or contains stones, cholecystectomy is definitely indicated. Removal of a functioning gallbladder tends to cause hepatitis, though slight, and disturbances of structure and function of the duct system which may account for symptoms of distress occurring in some patients after cholecystectomy. Therefore if the gallbladder concentrates sufficiently to visualize with the Graham-Cole test and is free from stones, medical control should be tried before cholecystectomy is done.

COMMENT

Animal experimentation which should bring "conviction of sin" to the most conscientious antivivisectionists.

C. H. G.

Brain Abscess

● J. E. J. KING (*Annals of Surgery, 103: 647-667, May, 1936*) describes his method for the operation of brain abscess by open approach to the abscess, removal of the overlying cortex and a portion of the presenting capsule, evacuation and irrigation of the abscess cavity, thorough inspection of the cavity, and its "eventual obliteration" by temporary eversion and herniation. Most of the brain abscesses in which this treatment is employed are secondary to infection of the middle ear and mastoid or of the nasal sinuses, or the result of trauma. This method is not indicated in cerebellar abscess or in small, deep and centrally located cerebral abscess. The vast majority of all cerebral abscesses, the author has found, "approach the dura at a point where it can be attacked at a depth which varies from ½ to about 3 cm." The overlying brain substance is removed by means of the electrosurgical unit; the author has never seen any permanent sequelae such as aphasia, mental deterioration, or paralysis, result from this procedure. The abscess capsule is opened with the electrosurgical needle and the pus removed by suction. No drainage tubes are used but the abscess cavity is packed with iodoform gauze strips; a small rubber irrigating tube is carried within the overlying gauze and instillation of azochloramid solution is made into the superficial dressing every two hours. Azochloramid has been found superior to Dakin's solution, because more prolonged in action, non-irritating to the skin (or scalp), and easily prepared, (See abstract of article by E. H. Kennedy, *Medical Times*, April, 1936, p. 120). At daily dressings the iodoform gauze strips are gradually removed, until the floor of the abscess cavity becomes sufficiently elevated to permit the complete removal of the gauze within the cavity. The floor of the cavity is not allowed to become elevated beyond the level of the skull; lumbar puncture may be used by the third or fourth postoperative day to prevent further herniation. In 17 cases of single brain abscess in which this operation has been done there were 3 deaths, a mortality of 17.5 per cent.; in the last 10 cases there was only one death.

COMMENT

Here is described the treatment of brain abscess by operation and close observation thereafter. The method is thorough-going, surgically sound, and gives remarkable results in the hands of the author.

C. H. G.

One Hundred and Five Gastrectomies for Peptic Ulcer without a Death

● JEAN DUVAL (*Mémoires de l'Académie de chirurgie, 62:543-548, April 1, 1936*) reports 105 gastrectomies for peptic ulcer; the majority of these cases were ulcers of the lesser curvature or posterior surface of the stomach and ulcers of the duodenum; there were 19 cases of pyloric or pre-pyloric ulcers. In 10 cases a gastro-enterostomy had been done previously and in 9 cases operation had been done previously for perforation. The gastrectomy was done in each case by Finsterer's method, under local anesthesia sometimes supplemented by general anesthesia. Postoperative recovery in most cases was rapid and uncomplicated; only 7 patients had any complications and these were relatively slight; there were no serious complications and no deaths. Almost all these patients had been given a thorough course of medical treatment prior to operation; in some cases operation was done before medical treatment had been given a full trial because the patients were travellers or sailors unable to carry out the regimen prescribed. Dupal considers gastrec-

tomy the operation of choice in all cases of peptic ulcer where medical treatment has failed and operation is indicated.

COMMENT

A record truly remarkable in many features!

C. H. G.

●

Urology

Prevention of Recurrent Calculi

● C. C. HIGGINS (*Journal of Urology, 35:494-498, May, 1936*) reports that a review of cases of renal calculi operated at the Cleveland Clinic up to 1932 showed recurrence of the calculi in 16.4 per cent. The usual postoperative treatment included treatment of any urinary tract infection and relief of urinary stasis by ureteral dilatation "or other required procedure." Since 1932 a dietary regimen has been added to the other therapeutic procedures following operation for renal calculi. This has included the addition of vitamin A in the form of haliver oil capsules or carotene-in-oil capsules. Vitamin A is prescribed for two reasons in these cases: (1) Because a considerable percentage of these patients show a definite vitamin A deficiency on Jean's test; and (2) because of the specific effect of this vitamin on epithelial structures, to promote rapid epitheliation where denudation has occurred. For patients with stones composed of calcium or magnesium phosphates or carbonates which form in an alkaline urine, or oxalates which are precipitated in a wide range of urinary reactions, a high vitamin A acid-ash diet is given, with an excess acid-ash sufficient to maintain the urinary pH at 4.8 to 5. Medication by mouth in the form of enteric coated tablets of ammonium chloride may also be required, especially in the presence of infection. If urates and uric acid crystals appear in the urine, the acidity of the urine is decreased until they disappear. For patients with calculi of cystine or uric acid, which form in an acid urine, the reaction of the urine is shifted slightly to the alkaline side by a high vitamin A alkaline-ash diet; if phosphates or carbonates are precipitated at any time, the reaction is modified toward the acid side until they disappear. The patient is taught to take pH determinations of the urine with a simple apparatus and reports to the physician every two to four weeks. By means of this dietary regimen in addition to the usual therapeutic procedures, the incidence of recurrent renal calculi at the Clinic has been reduced from 16.4 to 4.7 per cent.

COMMENT

Careful note should be made of the determinations of urinary reaction, crystallization and infection. Modifications of the treatment are always in order. Most important of all is the correction of infection.

V. C. P.

Cancer of the Bladder

● R. S. FERGUSON and his associates on the Carcinoma Registry Committee of the American Urological Association (*Journal of Urology, 35:481-490, April, 1936*) present a study of end results in 658 epithelial tumors of the bladder treated prior to Jan. 1, 1931 (More than five years ago). Of the 658 patients, 151 were living on Jan. 1, 1936, a survival rate of 23 per cent.; and 104, or 15.9 per cent. of the series, "were absolutely without evidence of disease by sign, symptom and cystoscopic examination." The remaining 47 survivors had some evidence of recurrence or metastasis. A classification of the tumors, according to their grade and morphological characteristics, shows that 13.9 per cent. of patients with grade 3 tumors were living, and only 4.3 per cent. of those with grade 4 tumors were living; but 45.9 per cent. of those with grade 1 tumors and 25.7 per cent. with grade 2 tumors survived five years. Of 312 patients with papillary tumors, 34 per cent. survived five years, but only 13.9 per cent. of those with infiltrating tumors were living. The size of the tumor also influenced the end results; tumors less than 2 cm. in diameter were controlled five years in 30.3 per cent., but when the tumor was larger than 5 cm. in diameter, only 15.8 per cent. of the patients were living at the end of five years. Among 468 patients treated by open operation there were 29 postoperative deaths, or 6.2 per cent. operative mortality. There were only 2 cases in which a total cystectomy was done; neither patient survived five years. There were 27 cases with partial resections of the bladder; there were 8 five year survivals with evidence of recurrence or metastasis in 3 cases. Of 105 patients treated by cystotomy and simple excision of the tumor 34 lived five years, and of these 25 (or 23.8 per cent.) were free of dis-

ease. Cystotomy with implantation of gold seeds of radon was employed in 147 cases, with 24 five year survivals and 13 free from evidence of disease (8.8 per cent.); cystotomy with fulguration in 121 cases gave 30 survivals and 18 free from disease (14.8 per cent.); cystotomy with application of the actual cautery in 66 cases resulted in 12 survivals, 8 without recurrence or metastasis. Cystotomy combined with these various physical measures was employed in more unfavorable cases than the purely surgical methods. Application of gold seeds of radon or fulguration through the cystoscope without open operation was used, however, in the most favorable group of cases. Of 54 patients treated by the cystoscopic application of radium, 11 survived and 8 (14.9 per cent.) were free from disease. Of 76 patients treated by cystoscopic fulguration, 29 survived and 25 (or 32.9 per cent.) were free from disease. Fifteen inoperable cases were treated by the Roentgen rays, and of these 2 survived five years, one without evidence of disease. The Committee notes that no definite conclusions can be drawn from this report as to the results of various forms of treatment since the number of cases is not sufficiently large "to warrant summary judgment."

COMMENT

Although summary judgment is not possible, nevertheless the basic facts of cancer stand out. The best results are in early, noninfiltrating cases eradicated promptly and thoroughly. I am personally of the opinion that definitely long courses of x-ray of high voltage and rather low amperage before and after operation are a very efficient adjuvant treatment.

V. C. P.

Prostatectomy or Prostatotomy: Syms' Perineal Prostatectomy

● V. C. PEDERSEN (*Urologic and Cutaneous Review, 40:168-172, March, 1936*) is convinced from a study of results reported that transurethral resection of the prostate is an important and major procedure, not a minor procedure, and that it "belongs to the hospital and not to the office." Moreover its use is limited to carefully selected cases, chiefly obstructions of the bladder neck, and it can never displace the operation of prostatectomy. In his experience, he has found the Syms technique of perineal prostatectomy to give the most satisfactory results, although this method has not been as widely used as some others. He has modified Syms' original technique somewhat, by using the average lithotomy position instead of its extreme degree, carrying out the incision and dissection so as to create on each side a "rather complete anterior and posterior flap of fat and fascia," and opening the capsule of the prostate horizontally. The prostate is enucleated as completely as possible; the bladder irrigated until free of clots, and a perineal tube inserted into the bladder. The tube is removed and the patient allowed to sit up in a chair by the third or fourth day (not on the first postoperative day as advocated by Syms). Urination through the urethra begins about the eighth day and is complete by about the eighteenth day. The patient is trained to urinate every two or three hours and stop and start the stream several times on each urination. The Syms technique requires exact knowledge of the anatomy, and great precision and gentleness in the enucleation, but with these precautions involves minimum damage to the muscles, nerves and pelvic floor; convalescence is good and rapid with prompt restoration of normal urination and early resumption of normal activities.

Continuous Irrigation of the Bladder in the Treatment of Alkaline Incrusted Cystitis

● ALFONSO and EMILIO DE LA PENA (*Urologic and Cutaneous Review, 40:314-315, May, 1936*) note that alkaline incrusted cystitis (or calcareous cystitis) occurs more frequently in females than in males. The bladder urine is always strongly alkaline and the pathogenic bacteria present are such as grow in an alkaline medium. The authors have found that if the bladder is irrigated with a 1 per cent. solution of acetic acid, it remains acid for about half an hour. They were, therefore, led to try continuous irrigation of the bladder with an acid solution in order to control the infection and the calcareous deposits in alkaline incrusted cystitis. Three cases in women were treated, in all of which tuberculous infection had been excluded and the upper urinary tract was free from pus and organisms. A cystotomy was done and the bladder continuously irrigated with a 1 per cent. acetic acid solution by means of a Murphy tip connected to a suprapubic tube and a Pezzer cath-

eter inserted into the bladder to drain the overflow of acid solution. The results were good; the severe pain in the bladder was promptly relieved; and the suprapubic wound healed *per primam* when treatment was completed. The authors are of the opinion that intermittent bladder irrigation with the apparatus devised by Perdue of Durham, N. C., with a two-way catheter, may make cystotomy unnecessary and shorten the course of the disease.

COMMENT

The study of the effects of fluids of different chemical reaction upon the urine and precipitates therein is of more and more importance, especially as it has been found that the body tolerates these differences well and seems to employ them in restoration to a normal condition.

V. C. P.

Treatment of Prostatic Hypertrophy with Male Hormone

● D. van CAPPELLEN of the University of Amsterdam (*British Journal of Urology, 8:45-49, March 1936*) reports the treatment of prostatic hypertrophy with intramuscular injections of a preparation of male hormone (hombreol) in an oil solution. Hypertrophy of the prostate in man is due primarily to hyperplasia of the cylindrical epithelium, accompanied also by an increase in the smooth muscle and connective tissues. In experiments on dogs with prostatic hypertrophy it was found that injections of the male hormone definitely reduced the amount of cylindrical epithelium. The author has treated 50 cases of prostatic hypertrophy in man with the male hormone preparation, using at first one ampoule daily, and later larger doses. In about 50 per cent. of these cases, there was a marked advance in improving the urination, relieving frequency, reducing the residual urine and improving the general health, although the reduction in the size of the prostate was not marked; in the other 50 per cent. there was only slight or no improvement. In some cases the hormone therapy must be repeated occasionally; in others, one course of treatment has given relief for two years and more.

COMMENT

Observations in the course of this form of treatment are being made but the time is too early for conclusions.

V. C. P.

Pediatrics

Short Wave Therapy in Whooping Cough

● K. R. von ROQUES (*Münchener medizinische Wochenschrift, 17:680-681, April 24, 1936*) reports the treatment of whooping cough with the short wave high frequency current. The electrodes are placed in the middle of the chest and the back; the wave length employed was 12 meters; the duration of the treatment ten to fifteen minutes. Daily treatments are given until the typical paroxysms of coughing cease, especially the night attacks. If there is only a residual bronchitis persisting, this does not require further treatments, as it subsides promptly. In a series of 19 cases treated the average number of treatments was 8.4; three children, including two brothers, required fifteen to seventeen treatments, but in most instances the duration of the disease was definitely shortened, and marked relief was obtained after the first two or three treatments.

COMMENT

The treatment of whooping cough with the short wave high frequency current deserves more investigation. However, for practical purposes it cannot be universally used. At the present time I believe we have no better plan than the use of vaccine during the incubation and catarrhal stages, and, during the second stage, the use of therapeutic measures outlined by Sauer as follows: 1. 25% ether in olive oil, given per rectum in doses of one tablespoonful three or four times daily. 2. Rest in bed one to two weeks. 3. Avoid complicating infections.

O. L. S.

A Comparatively New Triphenylmethane Dye-Bismuth Compound in the Treatment of Infectious Diarrheas

● I. S. BARKSDALE (*Archives of Pediatrics, 53:243:250, April 1936*) notes that the infectious diarrheas of infancy and childhood "have long been a great problem in therapeutic and preventive medicine." In recent years much more progress has been made in the prophylaxis and control of these diseases than in the actual treatment. The author and his associates in the Green-

ville (S.C.) Department of Health have developed an effective germicide by the combination of a soluble bismuth salt with the triphenylmethane dye, hexamethyl-triaminotriphenyl-carbinol chloride, which has been found to be practically free from toxicity. This dye-bismuth compound has been used in the treatment of various infections, and more recently in the treatment of infectious diarrheas, especially in children. Before this compound is used a definite diagnosis of infectious diarrhea must be made, as it is, of course, useless in non-infectious diarrhea. The average adult dose of the compound given by mouth is placed at gr. .065 gm. and Young's rule of calculation is used for determining the dose for children. For infants under one year the compound is given, in a solution of aromatic elixirs (U.S.P.), one drop of the finished preparation containing 1/12 gr. of the drug. This compound has been used in the treatment of 26 cases of infectious diarrhea in infants and young children showing dehydration, fever, and frequent stools with blood. Symptoms began to improve within twenty-four to forty-eight hours, and this improvement was followed by recovery without recurrence. Three illustrative cases are reported.

Skin Tests in Rheumatic Fever Children

● V. P. WASSON (*Archives of Pediatrics, 53:318-324, May, 1936*) reports skin tests with hemolytic streptococcus nucleoproteins in 137 children with rheumatic fever on their first admission to the Fifth Avenue Hospital, New York City. Positive reactions were obtained in 109 of these children, or 79.4 per cent., negative in 28, or 20.6 per cent. The percentage of positive reactions increased with the age of the patients; in the age group of three and a half to six years, reactions were positive in 69 per cent.; in the age group six to ten years, in 78.46 per cent.; and in the age group ten to sixteen years, in 88.37 per cent. The degree of the positive reaction was also more marked in older children. Of the 137 children, 129 were tested for functional capacity of the heart in the Cardiac Clinic; no correlation was found between the intensity of the skin test and the severity of the cardiac disease. In skin tests with the hemolytic streptococcus nucleoproteins in 90 non-rheumatic children, only 28.88 per cent. gave positive skin reactions; the highest percentage of positives were found in a group of orphanage children, who, it is probable, "became markedly sensitized to streptococci due to the prevalence of upper respiratory infections in institutions."

Pneumonia in Children

● J. L. KOHN and S. B. WEINER (*American Journal of Diseases of Children, 51: 1095-1100, May, 1936*) report that in 1,000 cases of primary acute pneumonia in children at Mt. Sinai Hospital, New York City, the mortality was 19.9 per cent. The highest mortality was observed during the first year of life (nearly 39 per cent.). Of the children who lived, 40 per cent. were discharged with positive physical findings in the lungs (bronchial breathing, râles or impaired resonance); 57 per cent. had roentgen-ray evidence of infiltration. Eighty of the children with positive findings on discharge were followed up: all evidence of disease disappeared within six months in 36 of these cases. There was no relation between the severity of the initial illness and the persistence of physical signs or infiltration as shown roentgenologically. The chief complications were empyema, peritonitis, renal infection and meningitis.

Calcium in the Control of Convulsions in Infancy and Childhood

● W. R. SHANNON (*Journal-Lancet, 56: 278-283, May, 1936*) notes that the most important cause of convulsions in infancy and early childhood is tetany or spasmophilia, in later childhood epilepsy. Whatever the clinical condition in which convulsions occur, the "essential symptomatology of all seizures is so like in character as to suggest with stubborn insistence that the underlying disturbance in cerebro-cellular function is similar, or essentially similar in all." For emergency treatment, when convulsions are either "present or threatening," the author uses calcium given by intravenous and intramuscular injection, supplemented by the injection of parathyroid extract. Either calcium chloride or calcium gluconate may be employed for intravenous injection, calcium gluconate for intramuscular injection. The intravenous adminis-

tration acts more rapidly in raising the calcium of the blood; the action of the intramuscular injections is slower but more sustained. The injection of parathyroid extract, in addition to calcium, has proved a valuable procedure in the control of convulsions, the author has found. Its action is slower than the calcium injections, but prolongs their effects. For new-born infants a dose of ¾ to 1¼ c.c. of parathyroid extract is employed, and for older infants and children 1½ to 2 c.c. This dose may be repeated at four to eight hour intervals as long as nervous irritability and danger of convulsions exist. The ideal control for this therapy would be frequent determinations of the blood calcium, but as this is often not possible, the response of the patient "must determine the intensity of the treatment." As soon as possible, the oral administration of calcium must be begun and this is continued as a routine treatment when parenteral administration is no longer necessary. For oral administration in the interval between attacks such calcium salts as dicalcium phosphate, calcium gluconate or calcium lactate are employed. Vitamin D in concentrated form is also given; larger doses are necessary for the control of tetany in infants than for the prevention of rickets. Parathyroid extract is not given in the interval treatment. While this interval treatment has been used chiefly in tetany, the author is of the opinion that it is of value also as an adjunct to the usual treatment of epilepsy in children. In the control of convulsions of any type, other well recognized measures should be used if necessary to supplement the calcium-parathyroid treatment.

Edema in Infancy and Childhood as an Expression of Chronic Dietary Insufficiency

● KATHARINE DODD and A. S. MINOT (*Journal of Pediatrics, 8:442-451, April, 1936*) report a study of 41 cases of edema in children in which a thorough study of the patient showed no cardiac or renal disease. The edema was sometimes confined to the legs and feet, but in several cases there was a generalized anasarca. This form of edema was found to be associated with malnutrition which in some cases resulted from chronic gastrointestinal disturbance, such as celiac disease, protracted diarrhea or tuberculous enteritis, or from repeated or prolonged infection; or from a diet definitely inadequate in total calories and in protein. In most cases there was a combination of the factors of chronic disease and inadequate diet. In only 3 of the 41 cases was the diet known to have been adequate one of these children had tuberculous enteritis, another prolonged diarrhea, and a third multiple infections. A study of the serum proteins in these cases showed that both the total protein and the albumin fraction were definitely below normal; the albumin fraction showed the most marked reduction. Unless there was a primary disease that made recovery impossible, treatment with an adequate diet, sometimes supplemented by blood transfusions, resulted in a prompt reduction of the edema, with restoration of the serum proteins to normal.

Values for Red Blood Cells of Average Infants and Children

● E. R. MUGRAGE and M. I. ANDRESEN (*American Journal of Diseases of Children, 51:775-791, April, 1936*) report determinations of the quantity of hemoglobin, the number of red blood cells and volume of packed cells in a group of 533 normal children of both sexes, ranging in age from one to thirteen years. The children were divided into eighteen age groups. No significant differences between boys and girls were found. It was found that the averages for the amount of hemoglobin, the number of red cells and the volume of packed cells were high at birth, reached a low level between the ages of two and four months, then showed a transient rise between four and eight months, followed by a second decrease. At the age of eighteen months, a sustained gradual increase began and continued to the twelfth year. The average values for children twelve years of age were practically the same as those found for normal women in a previous study. The means for corpuscular hemoglobin and volume, in comparison with mean values for the normal adult series, were found to be highest at birth and in the first few days of life. The lowest mean for corpuscular volume was found between the ages of twelve to eighteen months; the adult level was reached by the age of three years. The corpuscular hemoglobin concentration was remarkably uniform throughout all the age groups studied and the majority of values were well within the range observed in normal adults.

Cultural Medicine

OLD TRAILS

A Moving Picture of the Centuries

LET us fancy ourselves super-Lindberghs, flying down the centuries and enjoying a panoramic view of all the epochs in the story of medicine.

It will be recalled that the "Lone Eagle," in his flight to Paris, passed through one night of darkness. Similarly, we shall fly through the so-called Dark Ages—that period extending from the fall of the Roman Empire in the fifth century to the opening of the eleventh century—during which mankind was storing energy for the burst of creative glory that marked the Renaissance.

What we should see in such a flight would unfold itself in some such orderly manner as we show now—paying attention only to worth while general trends or facts of particular significance:

Primitive Medicine: Era of magic and demonology.

Grecian Foundations and Graeco-Roman Era, 460 B. C.—A. D. 130: Disease studied objectively; passing of priestcraft; natural law and common sense invoked; practical bedside methods; anatomical, surgical and pharmaceutical beginnings; public health taken into some account; university founded at Alexandria; first textbook on medicine (Celsus).

Second Century: Experimentation and revival of Grecian methods; anatomy advanced.

The Middle Ages, A. D. 476—A. D. 1492: Hospitals initiated by Christianity; Arabian medicine contributes to pharmacy, hospital building, and the classification of diseases; rise of the medieval universities.

Sixteenth Century: Discovery of the general circulation of the blood by Cesalpinus; modern anatomy; advancement of chemistry; surgery, midwifery, pharmacy and eye affections enlist much effort; beginning of modern medicine definitely foreshadowed.

Seventeenth Century: Surgery in the modern sense becomes possible; chemistry definitely separated from alchemy; physiology established as a science (Harvey); bedside teaching introduced; microscope perfected; embryology begun.

Eighteenth Century: Microscopic investigations; physical diagnosis advanced (percussion); bedside medicine developed; diseased organs studied; surgery, physiology and pathology advanced.

Nineteenth Century: Vaccination; antiseptic surgery; ether anesthesia; bacteriology; the cell doctrine; physical diagnosis advanced (the stethoscope); diseased tissues studied intensively.

Twentieth Century: Completion of the linking of the other sciences with medicine; preventive (preclinical) medicine, sanitation and hygiene; the modern hospital system; public health administration and civic medicine; the conquest of the infectious diseases; biochemistry; pathologic physiology; laboratory medicine; prenatal care; reduction of infant and maternal mortality; twentieth-century surgery, including operating room diagnosis and certain applications of military technic to civil practice; perfection of local and general anesthesia and of asepsis; the new science of nutrition; internal medicine triumphant: insulin, new heart facts, etc.; trained nursing; physical therapy; psychotherapy; specialization; medical social service; vital statistics; intensive and comprehensive undergraduate instruction and continuous professional education; the search for, and elimination of, focal infections; public dissemination of medical knowledge; increasing application of accumulated knowledge; internationalization of medical activities; a strong medical press; great research foundations; food and drug control; great advances in tropical medicine; venereal disease prevention and control; lengthening span of life; medicine a cooperative social undertaking; leadership in the modern civilized state provided by

medicine; the medical scientist himself, whose use by modern society determines the degree to which it can thrive.

●

The Beginnings

Cumston saw four divisions in the evolution of medicine; these he classified as Instinctive, Theological, Metaphysical and Scientific.

The age of primitive medicine was an era of magic and demonology ushered in by Instinctive factors. As Osler put it, early medicine was rooted in the instinct of self preservation, in the longing to relieve afflicted loved ones, and, above all, in the softening effects upon the hard race of man of the maternal passion.

Superstition and folklore (folk-medicine) were deep roots of the early art of medicine. Spirits, angels, gods, devils and witches determined the issues of health, disease and death in the infancy of the race. The natural was supernatural and sorcery was a real force in the world. Disease was something apart from the body, an entity that had entered it at the behest of some god or spirit. Hence recourse was had to prayer, ritual, incantations, charms, the dance, and the use of herbs to exorcise or placate illness.

Diagnosis was through the gods, and so comes in our Theological Division. Isolation of the infected represented not merely abandonment, but also an attempt to conceal the afflicted from the demons who were torturing them.

The cure of disease was, of course, in the hands of priests and magicians, supernaturally experienced and learned.

The remedies and methods that came to be used by such physicians were employed for the same reasons that incantations, for example, might be invoked. But empirically, that is to say, through experience, such remedies and methods often, in time, proved their actual worth. In this way baths, the cleansing of wounds, sweating, bleeding (the origin of which, according to Pliny, is to be found in the example set by the bloodletting hippopotamus), fumigation, cauterization, enemata (Osler, in his *Evolution of Medicine*, cites the elephant's habit of administering enemata to himself with his trunk), inunctions, douches, plasters, poultices, cathartics and emetics all in time passed through a rationalizing process. The beating of patients to drive out demons causing insanity was the forerunner of some of the older methods of physical therapy. The infliction of amputations as punishment for crime aided in the development of a rude kind of surgery. The use of red light by primitive men for curing certain ailments finds an interesting modern echo in the prevention of smallpox pitting through Finsen's red-light treatment. A great physician (Littré) has said that "there is nothing in the most advanced contemporary medicine whose embryo cannot be found in the medicine of the past."

●

Priestly medicine—the Theological Division—crystallized in ancient Egypt, yet there civilization, six thousand years ago, marked a step or two out of a purely mystical and magical age into one showing some formulation of rational medical principles. And it is just here that we encounter our first medical pioneer—Imhotep, the first physician to stand out clearly from the mists of antiquity and destined to be worshipped at Memphis as a god, just as in later times Æsculapius was defied by the Greeks.

There was a higher order of Egyptian priests whose functions were decidedly mystical, and a lower order who were actual practitioners, acting as anatomists (dissection was a sacrilege but embalming processes disclosed much), pharmacists, surgeons and pathologists, and treating diseases of the eye and female pelvis. Herodotus says that in Egypt there was a physician for every part of the body; in other words, our present-day over-specialization is merely history repeating itself. These Egyptians were clever dentists, rather sensible hygienists, students of dietetics, physical therapists, epidemiologists (employing fumigation), fairly good surgeons (performing amputations and cutting for stone in the bladder, etc.), and artificers of surgical instruments. They were familiar with the use of opium and squill and it is supposed that the Arabians, later to distinguish themselves as pharmaceutists, owed much to the Egyptian pioneers. Intermediary between the higher and the lower orders of priest-physicians were the veterinarians and practitioners of military medicine.

What little that was rational in the medical practice of the Assyrians and Babylonians was derived from the Egyptians. The same thing is true of the ancient Jews, who were pathfinders and creators in the realm of public hygiene.

●

Early Hindu medicine had reached a high

development in the realm of surgery by the fifth century before Christ. The Hindu surgeons were especially adept at rebuilding mutilated noses by flap operations, suturing injured intestines, and dividing nerves for neuralgia. They cut for stone, performed cesarean section, operated upon hernias, removed cataracts, did skin-grafting, excised tumors, amputated limbs, treated fractures skilfully, and checked hemorrhage by cauterization, boiling oil or pressure. Inoculation against smallpox was practiced, and auscultation was employed in diagnosis. To the Hindus we owe the introduction of the drugs cannabis indica (hashish) and hyoscyamus (henbane). Their materia medica was quite extensive and they cured the bites of venomous serpents with remedies whose composition has been lost. The Rig-Veda (oldest of the sacred books—2000 B.C.) discusses tuberculosis and leprosy and mentions physicians as a special class.

"We see, therefore," says Seelig, that primitive medicine, alway to be regarded in a very definite sense as the forerunner of modern medical science, develops from rather formless and inchoate ideas, based largely on superstition and emotional religious impulses. Gradually empiricism forced its way into the primitive mind to the degree that cause and effect began to be realized; and in so far as this realization dawned, just in so far did rationalization infiltrate into medical thought. A definite transition cannot be traced from primitive medicine to later rational medicine, but that a gaping hiatus does not exist between the tanglewood of the earliest eras and the clearing made during the days of classic Greece, is evidenced by the development of medicine in Egypt and the influence of this development on Assyrian, Babylonian and Persian medicine and on the medicine of the Jews."

●

The Real Foundation

It was the Greeks who gave us the greatest genius of ancient medicine — Hippocrates.

Æsculapius, who lived before the Trojan War (1200 B.C.), and whose sons served as surgeons in the army during that conflict, was a great physician whose cures were so remarkable that he was deified, and whose death was due to the jealous vengeance of Zeus. He became the god of medicine and many temples were erected in his honor. These temples, conducted by the Æsculapian priesthood, were sanitaria in which hygiene, empirical practice and religious psychotherapy were applied. Votive tablets, the gifts of grateful patients, recorded descriptions of their diseases and their treatment, and these were the first clinical records, of which Hippocrates, founder of the first scientific system of diagnosis and healing, made good use.

Hippocrates was born about 460 B.C. Being the son of a priest of the Æsculapian temple at Cos, he inherited his profession and its priestly knowledge. But he discarded the old theories and formulated no principles that were not based upon observed facts. The old theological system was static, but Hippocrates, an intellectual product of the Periclean age, scrapped priestly bonds with medicine, and initiated dynamic investigation. He wrote much, and the record of his knowledge, gained at the bedside, is a marvel to this day.

The Father of Medicine, as Hippocrates is called, despite his scant knowledge of anatomy succeeded well in the reduction of fractures and dislocations, trephined the skull, and tapped the abdomen; he used a number of powerful drugs skilfully (e.g., hellebore and veratrum album); he knew how to control epidemics and drove the plague from Athens; his doctrine of humors as the cause of disease persisted through all the centuries after him; the healing of ailments by crisis, the conservative (expectant) treatment of disease, the curing of like by unlike, bleeding, low diet and purgatives in acute illness, elimination by way of the kidneys and lungs, sound hygienic rules, and the doctrine of the healing power of nature were all Hippocratic measures and beliefs that are influencing medical practice to this day because of much the same justifications that Hippocrates himself reasoned out.

Careful, exhaustive observations, and the formulation of principles and treatment only upon such facts as were thereby adduced, were the contribution of Hippocrates to medicine, and they still guide us.

But the remarkable structure so carefully erected by Hippocrates was all but ruined in Greece itself, after his passing, by a school of Dogmatists who speculated and theorized and dogmatized in a manner quite inimical to the Hippocratic method. Fortunately, Alexander the Great founded Alexandria in Egypt and, influenced by the interest of his teacher Aristotle in medicine, the best of Greek medicine was inoculated there and grew mightily under two

more early heroes of medical science—Herophilus (dissector of more than two hundred human bodies) and Erisistratus (discoverer of the tricuspid valve in the heart), clever clinicians and versatile investigators.

The great Alexandrian library was founded, autopsies and dissections were practiced, and physiology was foreshadowed. The relation of the brain to the rest of the nervous system, a distinction between veins and arteries, some understanding of the genital organs, and many other data were fairly well worked out. So here the old Hippocratic methods continued to function successfully until the second century after Christ, succumbing then, for a time, as a result of the disintegrating influence of two new schools of medicine—the Empiricists, who rejected theory utterly, and the Methodists, narrow sectarians who attributed all disease either to contraction or relaxation of the pores!

But the golden chain of medical science that has never really ceased to run continuously down the centuries was kept intact by Celsus, a Roman, who, in the first century after Christ, crystallized all worth while medical knowledge known to the world in a celebrated treatise or textbook which furnished an anchorage for harassed thinkers.

Even the work of Celsus did not prevent further dissent from orthodoxy, and until the appearance of Galen, greatest medical hero after Hippocrates, there was much chaos and a partial eclipse of Greek foundations.

●

The Graeco-Roman Phase

(Galen)

Rome seems never to have had any medical ideas of her own. The conquerer of Greece, she imported Hellenic thought. We have paid tribute to Celsus, but he was not an original thinker. It was Galen, a Greek, and physician to Marcus Aurelius, through whom Rome enjoyed a renaissance of Hippocratic medicine that was to influence the world for centuries.

Galen was born about A.D. 130 and arrived in Rome at the age of thirty-four. He was highly educated and in medicine was a product of the Alexandria school. He followed the principles and methods of Hippocrates but enormously modified and amplified them. Galen's vast system, necessarily faulty, was in large part slavishly accepted for fifteen hundred years, to the exclusion of all else except certain Arabian contributions to medicine and some advances in anatomy.

Galen's accomplishments and achievements were stupendous for the time. He experimented diligently in every possible direction. His anatomical descriptions of the brain, bones and muscles are especially excellent, but he failed to solve the riddle of the circulation. He elucidated inflammation, distinguished pneumonia, pleurisy and tuberculosis, established high grade surgical principles and practices, and made great advances in the matter of drugs. He wrote over seven hundred books. Intellectually, he was hardly surpassed by Aristotle. As physician to the gladiators, much opportunity was afforded him for the study of traumatic lesions. A great genius, marvellously learned and endowed with supernormal intellectual vigor, he attained an unquestioned authority which ruled forcefully the minds both of his contemporaries and of a long scientific posterity. Again the golden chain of medical science is linked along the ages, to enable the restored medicine of Hippocrates and the new knowledge of Galen to withstand the assaults of superstition and ignorance throughout the Dark Ages.

●

After Galen

(The Middle Ages)

When Rome fell (A.D. 476) and Constantinople (Byzantium) became the capital of what was left of the Roman system, Greek culture and speech there supplanted the Latin heritage. Great scholars preserved the old texts. The most noted of these were Oribasius, Aetius, Alexander of Tralles and Paul of Aegina. Then when the Arabs, dynamized by Mohammed, came into military conflict with Constantinople (sixth and seventh centuries), they absorbed its Greek science, including medicine. The Arabs also made contact in the sixth century, in Syria, Mesopotamia and Persia, with scholarly Greeks (Nestorians) who had been driven out of the Eastern Empire because of religious persecutions. The Arabs were not barbarians, like the Northern hordes which had descended upon Rome, and in the great schools which they established the Hippocratic and post-Hippocratic principles found a place again. Later, all this old knowledge and vast amounts of new (Arabian) knowledge seeped into Europe in the wake of trade and of war (the Moorish conquest of Spain). Thus the Arabs aided greatly in keeping our golden chain intact.

"These so-called Dark Ages," says Seelig,

"were merely fallow years during which the human mind became fertile soil for the growth of the new learning that was to replace the long period of sterility."

The Christian Church was also a great medium for the custody, copying and transmission of the old learning in Europe. Its monastic schools were the forerunners of the medieval universities whose rise meant everything for medicine. Benedictine monks were particularly active in the propaganda for medicine. And then the establishment of many hospitals by the Church laid great foundations for subsequent progress.

But it was the Arabs who supplanted the Greeks in intellectual eminence. They founded great schools at Bagdad in the East and at Cordova in the West. Their medical supremacy lasted from the eighth to the twelfth century, when they were overthrown by the Turks in the East and driven from Spain in the West.

The Arabs developed some notable physicians. Rhazes gave the first authentic descriptions of smallpox and measles; Avicenna, the "Prince of Physicians," wrote the famous *Canon*, which summarized all medical knowledge: Avenzoar, the most original writer and observer of the Arabian group of famous physicians, discoursed like a modern upon cardiac, chest, throat and ear diseases; Averroës functioned as an encyclopedist; Albucasis was noted as a surgeon and as a writer on obstetrics; and lastly, Maimonides, a great Jewish authority on poisons and personal hygiene, acted as court physician to Saladin himself.

Many great hospitals and medical colleges were founded by the Arabs, and extraordinary advances were made by them in the domain of drugs.

During the Moorish occupancy of Spain the Arabic medical texts were translated, with the help of Jewish scholars, into Latin. This gave to the whole world of European scholars the great Graeco-Arabian system of medicine—a fact, obviously, of tremendous importance.

●

The Jewish scholars and physicians who flitted about the world of the Middle Ages, distinguished for learning and skill and frequently acting as royal physicians in European countries where, ironically enough, no Jew was permitted to study in the schools, played a great part in bringing about the intellectual renascence of medicine in the Middle Ages.

The rise of the universities in Europe was made possible by the influence of the Arabs in Spain, the pouring of their Greek culture into Italy accounting for the vigor of the School of Salernum—given life by the Benedictines but imbued with the Hellenistic spirit by the Moors. This school was founded in the ninth century. So inspiriting was its influence that by the fifteenth century Italy boasted sixteen universities, or as many as all the rest of Europe. Many great medical schools followed in the wake of Salernum — Bologna, Messina, Pavia, Prague, Vienna, and Heidelberg, in the order named, stretching from the twelfth to the fourteenth century.

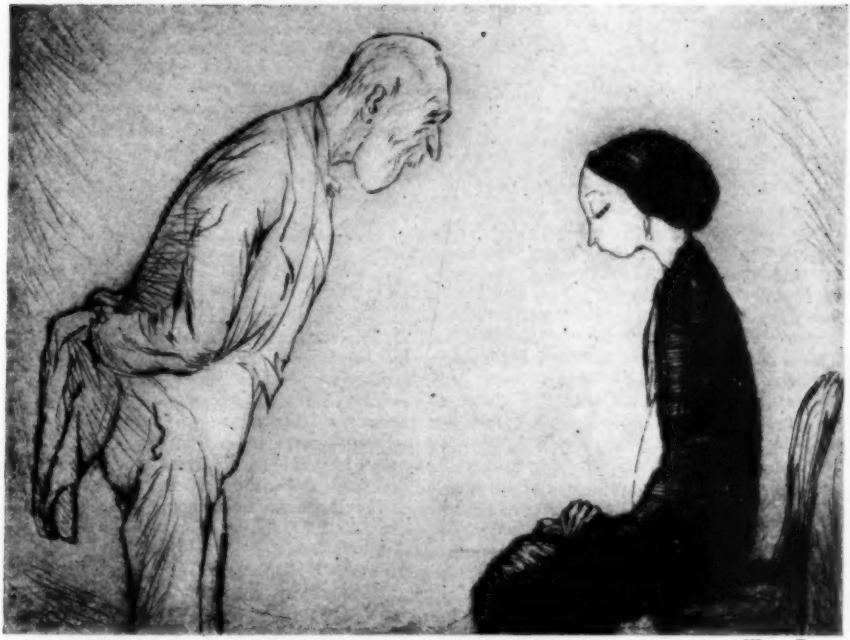
The medical authorities in these universities of the Middle Ages were Hippocrates, Galen, Avicenna and Rhazes. Beyond these there was but little progress for a time, despite a fine academic spirit.

●

But it was the work of a group about whom we shall now write briefly that gave the greatest impetus to progress. Roger Bacon, the Franciscan (1210-1292), was a realist who insisted upon observation, experiment, and freedom of thought. Arnold of Villanova (1235-1312), an indefatigable experimenter and rationalizer, refused to be bound by what he considered obsolete in the old medical heritage, while preserving a wholesome respect for whatever was sound in the original sources. Henri de Mondeville (1260-1320) taught anatomy as well as it then could be taught without human bodies and was insistent upon cleanliness as the first principle of surgery. Guy de Chauliac (1300-1368) first took holy orders and then studied medicine and surgery at the leading schools, becoming in the course of his great career an operator whose writings are strangely modern and informed. He was deservedly the greatest authority in surgery during the fourteen and fifteenth centuries. Lanfranchi, who died in 1315, was, however, the father of French surgery and presumably a source from whom Guy de Chauliac derived much of his inspiration. Finally, John of Arderne (1306-1390[?]) founded English surgery as the result of his experience in the Hundred Years War. Until he lived fistula-in-ano had been regarded as an incurable disease. The principle underlying his operation for this condition underlies the modern operation. This, if anything, was a greater achievement in his day than the Marion Sims operation for vesico-vaginal fistula in our own times.

—Continued on page 264

FREUD



—Will Dyson
Courtesy of Ferargil Galleries

Dr. Freud: "NAUGHTY — WHO'S BEEN THINKING PURE THOUGHTS AGAIN"

Medical Book News

Edited by TASKER HOWARD, M.D.

● All books for review and communications concerning Book News should be addressed to the Editor of this department, 1313 Bedford Avenue, Brooklyn, New York.

CLASSICAL PARAGRAPHS

● Tubercle is a true zymotic disease, of specific nature in the same sense as typhoid, scarlet fever, typhus, syphilis, etc., are. . . . Like these diseases, tubercle never originates spontaneously, but is perpetuated solely by the law of continuous succession. . . . The tuberculous matter is (or includes) the specific morbific matter of the disease. . . . By the destruction of this matter on its issue from the body, by means of proper chemicals or otherwise—seconded by good sanitary conditions—there is reason to hope that we may eventually, and possibly at no very distant time, rid ourselves entirely of this fatal scourge.

William Budd, M.D. The Lancet, Oct. 12, 1867, reprinted in Bulletin of the National Tuberculosis Association, May, 1936.

A New American Surgery

A TEXTBOOK OF SURGERY BY AMERICAN AUTHORS. Edited by Frederick Christopher, M. D. Philadelphia, W. B. Saunders Company, [c. 1936]. 1608 pages, illustrated. 8vo. Cloth, $10.00.

● The dominant plan of this textbook with 1349 illustrations is to give the student a concise presentation of surgery characterized by maximum authority. The book represents a collaboration of 184 contributors who have been chosen because of their outstanding ability in the subjects which they represent. These contributors are mostly men actively engaged in teaching surgery and the material presented should thus be particularly successful in instructing students.

The subject matter contains the accepted present day principles of surgery. Treatment is not restricted to the practice of the particular author and the etiology, pathology and diagnosis have been properly stressed. There are forty chapters which cover the entire range commonly included in a surgical textbook, from inflammation and repair of tissue, bacteriology, through the extensive range of the different systems, special organs, endocrine glands, asepsis, anesthesia, minor surgical procedures and pre- and post-operative care.

The illustrations are instructive; the text is readable and the substance gives the impression of authority and modernity. The book of 1608 pages is attractive from the point of view of print and general make-up. It is recommended for students and practitioners of surgery.

EMIL GOETSCH.

Third Edition of Johnston

A SYNOPSIS OF REGIONAL ANATOMY. By T. B. Johnston, M.B. Third edition. Philadelphia, Lea & Febiger, [c. 1935]. 460 pages, illustrated. 12mo. Cloth, $4.50.

● This is the third edition of a work that has always been popular with anatomical students. The conciseness and readable text employed in the anatomical descriptions is excellent. There are only eleven black and white illustrations and if any criticism could be made of the book, it would be that it needs more illustrating.

The B. N. A. terminology is used throughout in this edition. The chapter on osteology is an excellent one, and should increase the popularity of the book because of the marked interest that is being shown at the present time in bone injuries.

The main text of the book is preceded by a glossary. The descriptive portion of the book takes up the various regions of the body. The vascular, central nervous and other systems are described as topics along with the regional descriptions. There is a brief, but excellent, anatomical description of the ductless glands under the various regional headings.

Although this book is essential for the student of anatomy, it furnishes at the same time, an excellent ready reference text for the practitioner.

HERBERT T. WIKLE.

New Edition of French

AN INDEX OF DIFFERENTIAL DIAGNOSIS OF MAIN SYMPTOMS. By various Writers. Edited by Herbert French, M.D. Fifth Edition. Baltimore, William Wood & Company, [c. 1936]. 1145 pages, illustrated. 4to. Cloth, $16.00.

● Since the publication of the fist edition in 1912, this book has become firmly entrenched as a standard work on medical diagnosis. Symptoms and signs are alphabetically arranged and discussed. Diseases of the skin, eye, and genito-urinary tract are included. Many of the recognized laboratory procedures whose importance have been established are discussed. Amongst the 742 excellent illustrations are many fine skiagrams.

There is an extensive and complete index of 218 pages. This book should be included in the library of every practitioner and specialist as a ready reference volume.

HENRY JOACHIM.

Obstetrics at Harvard

A TEXTBOOK OF OBSTETRICS FOR STUDENTS AND PRACTITIONERS. By Frederick C. Irving, M. D. New York. The Macmillan Company, [c. 1936]. 558 pages, illustrated. 8vo. Cloth, $6.00.

● Irving's long awaited text-book is the amplified teaching material of the Harvard Medical School. The illustrations are line drawings, simple, yet excellent. Well planned for student and practitioner, obstetricians will be interested in the practice of the Boston Lying-in Hospital which is clearly described and advised throughout. Plasmaphaeresis is still used and intrauterine douches recommended for certain cases. Mouth to mouth resuscitation of the new born, Irving thinks, is equally as good if not better than complicated modern apparatus so familiar elsewhere. It was a relief to read that he has found replacement of the prolapsed cord discouraging, and the vaginal pack for placenta previa is well called pernicious. Polak's method of management of separation of the placenta is highly recommended. The chapter on forceps is excellent indeed, and so are the chapters on eclampsia, Caesarean section, and many others. The book serves its purpose admirably.

CHARLES A. GORDON.

In Praise of HCl

CHEMISTRY IN THERAPEUTICS. By Walter B. Guy, M.D. Philadelphia, W. Roy Huntsman, [c. 1935]. 182 pages. 8vo. Cloth, $3.00.

● The title of this book, "Chemistry in Therapeutics," would lead one to expect something scientific or based on experiment. The "chemistry," however, consists of a fanciful and fanatic dissertation on the supposed merits of hydrochloric acid as a therapeutic agent. The author speaks of brilliant cures from the intravenous injections of this acid in diseases too numerous to mention. For example, he tells us that in hay fever, pollen injections fail, but hydrochloric acid cures, for there is a deficiency of gastric HCl in such an underlying alkalosis—whatever that means. At times his language appears revolutionary in tone—"Humanity suffers, why delay . . . . Today all over the world the glad news has spread."

EMANUEL KRIMSKY.

An Important Contribution Concerning Infection

AGENTS OF DISEASE AND HOST RESISTANCE. Including the Principles of Immunology, Bacteriology, Mycology, Protozoology, Parasitology and Virus Diseases. By Frederick P. Gay and Associates. Springfield, Charles C. Thomas [c. 1935]. 1581 pages, illustrated. 4to. Cloth, $10.00.

● This book was designed to meet the students' need for a broad, comprehensive survey of the nature and causation of disease. Its scope includes not only bacteriology and immunology, but also protozoology, parasitology, mycology, studies of virus diseases, and allied subjects. The author has written or collaborated in the presentation of about one-third of the sixty-five chapters. The remainder bear the name of a score of previous or present colleagues in his department. His own viewpoint and his direction, however, are in evidence throughout the entire volume. This has resulted in a coordinated and homogeneous presentation of a wealth of material.

The book is divided into twelve sections. The earlier parts deal with the more general aspects of the nature and causation of disease. Included are sections on inanimate disease agents, the morphology and physiology of living disease agents, infection and epidemiology, resistance and immunity. Then follow sections on pathogenic bacteria, spirochetes, fungi, indeterminate pathogenic forms and animal pathogens. The practical results in the diagnosis, prevention and cure of infec-

tious diseases are also discussed.

The theoretical rather than practical aspects of the subjects are stressed. Following each section is a complete and carefully chosen bibliography. The volume contains many tables, photographs and diagrams.

This work is recommended to anyone seeking a ground-work in these fields. It is particularly commendable for its completeness and for the effective method in which such a large amount of material is presented.

MATTHEW WALZER.

Dr. Crile's New Work

THE PHENOMENA OF LIFE. A Radio-Electric Interpretation. By George Crile. New York, W. W. Norton & Company, Inc., [c. 1936]. 379 pages illustrated. 8vo. Cloth, $3.50.

● The work of forty-eight years by Dr. George Crile in experimenting on the phenomena of life has now been presented in one complete story. Since 1887, the cause of the sudden death of William Lyndman, in the University Hospital of Cleveland, following the crushing of both legs in a trolley accident, has been an obsession to him. All these years, Dr. Crile and his associates, in his own laboratories with the assistance of collateral investigations elsewhere, have been constantly delving into the mystery of shock.

The work is divided into three parts. The first part presents and develops the theory. The second part discusses the control of radio-electric mechanism, while the third part tests the theory. Physiology and chemistry led to no satisfactory conclusions but did open the way to a newer science; namely, electricity by which Dr. Crile could postulate the following statements: "Oxidation produces radiant energy. Radiant energy generates electric currents in protoplasm. Electricity is the energy that governs the activity of protoplasm. The normal and pathological phenomena of life are manifestations of protoplasm. Therefore, the phenomena of life must be due to radiant and electrical energy. This syllogism represents our problem."

Part I is very technical, carefully written and shows an honest effort to avoid pitfalls and the making of statements that rightfully might be questioned. Part II is less technical and takes up the control of the radio-electric mechanism. This is intensely interesting and in itself well repays the time given in its study. In an open and easy discussion, the application is made of the principles established in Part I to the various physiologic functions and organisms. Part III is the test of the theory; namely, the application of the principles previously established as shown by a more detailed statement in explanation of the experiments made by Dr. Crile himself and his associates and working out the data in all of the experiments. Unfortunate as the great war was it opened vast opportunities to Dr. Crile and others to observe the terrible shock sustained by human beings. It gave to them the opportunity to test and establish the findings, determined to a great extent previously on assumption alone by Dr. Crile in his honest effort to find truth and avoid guesswork.

Scientists, during the long years of investigation, have not wholly accepted the theory although it may seem plausible.

Great credit must be given to Dr. Crile for his study. The master mind of years of study deserves all the honors which have been accorded him and he will always be esteemed and appreciated as a genuine scientist.

EUGENE W. SKELTON.

A New Laboratory Manual

SYNOPSIS OF CLINICAL LABORATORY METHODS. By W. E. Bray, M.D. St. Louis, The C. V. Mosby Company, [c. 1936]. 324 pages, illustrated. 12mo. Cloth, $3.75.

This is a compact, convenient, and practical manual of laboratory methods. This book is evidently based upon the author's own practical experience and contains a selection of methods which he himself has found reliable. It is up to date and contains such recent developments as the Neufeld method of typing pneumococci. This book should prove useful not only to the student but also to the general practitioner who prefers to do his own laboratory work, because it is terse and at the same time clear and to the point.

A. S. WIENER.

Apropos of Food and Drug Legislation

AMERICAN CHAMBER OF HORRORS. The Truth About Food and Drugs. By Ruth deForest Lamb. New York, Farrar & Rinehart, Inc., [c. 1936]. 418 pages, illustrated. 8vo. Cloth, $2.50.

The author of this book is educational officer for the Food and Drug Administration at Washington, which is charged with the enforcement of the Food and Drugs Act and of five other less noted laws. She is a special, but none the less fair-minded, pleader for an improved law that will cover cosmetics, advertisements, and medical de-

vices, as well as food and drug labels. The title of her book is taken from the exhibition of harmful and fraudulent products and devices exhibited by the Administration as the most powerful argument for improved legislation in this field. In her book she assembles this evidence in detailed, documentary, yet always readable form, going carefully into the history of the Administration's most celebrated cases, and giving inside information about the nature, habits, and customs of those individuals and agencies which are fighting better food and drug legislation.

Possibly no bill that could be written would be entirely satisfactory to physicians because the law makers and the law enforcers cannot undertake the regulation of the practice of medicine; their efforts must, instead, be predicated upon the existing practice of healing, and certain obviously unscientific agents and procedures must, for legal purposes, be regarded as unassailable. But the better legislation advocated by the Food and Drug Administration can, as Miss Lamb shows, go far in protecting laymen and consumers generally from frauds which now rob their pocketbooks and are inimical to their health as well. While such a law would in no sense end self-medication, it would do a very great deal to rid such rather dubious procedure of the worst deceptions and dangers extant in the field. The book should be read studiously by all physicians. Better food and drug legislation unquestionably deserves their most active support at all times.

CHARLES SOLOMON.

Another Volume on the Biology of Dye Stuffs

BIOLOGISCHE UNTERSUCHUNGEN UBER FARBSTOFFE. By Dr. Iwao Matsuo. Volume 2. Kyoto, [c. 1935]. 1046 pages. 4to. Cloth.

This second volume of Dr. Matsuo's work at the Imperial University of Kyoto finishes the investigations, by his pupils, on the biological relations of the dyestuffs. Part IV. on the excretion of dyestuffs is completed. Part V. is devoted to the resorption of the dyestuffs. Part VI. covers various subjects, such as the influence of dyestuffs on fermentation, the duration of dyestuffs in the blood circulation, the photodynamic action of fluorescent dyestuffs on the stability of the cholesterin hydrosols, the photodynamic-hemolytic action of dyestuffs, and the photodynamic action on immune body formation.

The work should occupy a field of great usefulness in laboratories of physiology, pathology and serology, as well as in clinical diagnosis and many other types of research work.

J. M. VAN COTT.

Health and the Teeth

DENTAL INFECTION AND SYSTEMIC DISEASE. By Russell L. Haden, M.D. Second edition. Philadelphia, Lea & Febiger, [c. 1936]. 163 pages, illustrated. 8vo. Cloth, $2.50.

It is indeed a pleasure to read and review this book. For here the author, who has a scientific mind and a proper perspective in regard to the role of dental infection to systemic disease, neither overemphasizes nor under-estimates the entire problem.

His correct evalution of dental infections and systemic disease depends upon the following fundamental facts:

1. The bacteriology of dental infection, which necessarily includes the correlation of cultural findings with radiographic and clinical examination;
2. The pathogenicity of the organisms found in dental infections;
3. The types of disease which may arise from dental focal infection;
4. The experimental proof for the relation of infected teeth to metastatic disease in the patient.

This book is the result of research work done in the past six years at the Deaner Institute in Kansas City, Missouri, and the Department of Experimental Medicine of the University of Kansas School of Medicine, so that not only is the work recent and modern but also conducted by competent investigators and research men, and therefore most dependable.

This little volume, should be read by every practicing physician, dentist and specialist.

OSCAR RODIN.

A New English Work on the X-Ray

A TEXTBOOK OF ROENTGENOLOGY. The Roentgen Ray in Diagnosis and Treatment. By Bede J. Michael Harrison, M.B. Baltimore, William Wood & Company, [c. 1936]. 826 pages, illustrated. 8vo. Cloth, $10.00.

The author has presented the subject of roentgenology in a different form. Instead of the usual procedure of giving the methods of examination or treatment, with a description of the roentgenological changes presented under various types of injury or disease or the response of pathological tissue to irradiation, the author takes up the subject from the standpoint of anatomy, physiology and pathology of various abnormal states. He then considers how well

these may be shown by x-ray examination, or the disease process relieved by x-ray therapy.

The preliminary remarks on technique are splendid, and the whole book is commended not only to roentgenologists but to all physicians who would familiarize themselves thoroughly with what can be accomplished within the domain of roentgenology. The entire subject is presented in a scientific and yet delightfully lucid manner.

CHARLES EASTMOND.

Doctor Wood's New Edition of Delafield & Prudden

DELAFIELD AND PRUDDEN'S TEXT-BOOK OF PATHOLOGY. Revised by Francis C. Wood, M.D. Sixteenth edition. Baltimore, William Wood & Company, [c. 1936]. 1406 pages, illustrated. 8vo. Cloth, $10.00.

The sixteenth edition of this work, which appeared first just thirty years ago, indicates very well the accumulation of knowledge in the field of tissue pathology since 1885.

Dr. Francis Carter Wood reflects in this work a comprehensive knowledge of pathology and its allied sciences. There is quite a strong tendency to be dogmatic but this must necessarily be so where much space cannot be alloted to each subject.

The field is covered in two divisions, general pathology and special pathology. The illustrations for the most part are ample and well done. The language is clear and simple. Many of the ideas as expressed, offer material for argument. Yet the point of view of the teacher must be maintained, and therefore, they are expressed unequivocally.

The bibliography of the important references to the literature appears in connection with the subject discussed. It will probably be a handicap to most users that the more recent important references are not included.

The book should prove a popular text and guide for medical students.

MAX LEDERER.

Valuable Monograph on Abortions

ABORTION, Spontaneous and Induced, Medical and Social Aspects. By Frederick J. Taussig, M. D. St. Louis, The C. V. Mosby Company, [c. 1936]. 536 pages, illustrated. 4to. Cloth, $7.50.

This is a comprehensive treatise on the subject from both a medical and social aspect as is indicated by the title. The qualifications of the author to present a work of this nature are not to be disputed. His vast experience and his diligent study of the subject are evident upon reading the pages of this volume. Fearlessly, controversial points are presented, and no doubt is left in the mind of the reader as to the author's well founded conclusions. There are some who will take issue with him for his broad indications for therapeutic abortions, but none will deny the strength of his arguments.

The social as well as the medical aspect is treated with thoroughness, and the chapters in the former abound with recommendations that could come only from a most detailed and thorough study of the subject.

To obtain a better understanding of the management of one of the most common conditions encountered by both the general practitioner and specialist, this volume is invaluable. For those who would make a study of the problem on the whole, figures and facts are presented that provide an excellent basis for such a study.

WILLIAM C. MEAGHER.

Another Volume from the Bassett Hospital

CLINICAL MISCELLANY. Vol. II, 1935. The Mary Imogene Bassett Hospital, Cooperstown, New York. Springfield, Charles C. Thomas, [c. 1935]. 217 pages, illustrated. 8vo. Cloth, $3.00.

The type of work being done in the Mary Imogene Bassett Hospital is shown in this volume of reports which covers subjects in medicine and surgery. Twenty papers, on usual and unusual conditions, are presented in detail and give valuable information on many conditions. It would be impossible, in a brief review, to comment upon the individual subjects except to state that the volume contains much which will be of value to one who studies it.

The reviewer recommends careful study of this publication.

HENRY M. MOSES.

English Translation of Italian Work of 1872

PHYSIOLOGY OF LOVE. By Paolo Mantegazza. Translated from the Italian by Herbert Alexander, edited by Victor Robinson, M.D. New York, Eugenics Publishing Co., [c. 1936]. 237 pages. 8vo. Cloth, $3.00.

This book was published first in 1872 and met with a storm of criticism, which it did not deserve. Highly moral, beautiful in conception and gracefully written, it is part of a trilogy. It is well described by Victor Robinson in his introduction as a lyric popularization of Darwin's biological classic,—Descent of Man and Selection in Relation to Sex, which had appeared the

year before. He has not mistaken desire for love, physical gratification for passion. "Everyone receives exactly the quantity of love he deserves." For this modern world, Mantegazza's book holds few thrills. It is literature.

CHARLES A. GORDON.

A Dietetic Discussion

YOU MUST EAT MEAT. Fanoies, Foibles and Facts about Meat. By Max Ernest Jutte, M.D. New York, G. P. Putnam's Sons, [c. 1936]. 164 pages. 12mo. Cloth, $2.00.

"The stepchild of modern dietetics"—such has been the attitude towards meat in more recent years, according to the author. Hence, the justification for a popular treatise to defend this underdog. While the author is partial to meat and offers logical reasons for its employment, with which no medical man can disagree, he does not swing to such an extreme as to warrant him being called a cultist. His aim is to show that we humans should not be strict vegetarians, but are anatomically and physiologically designed to be omnivorous. He does not disparage the use of fruits and vegetables in the daily diet of healthy persons, but calls attention to their abuse to the exclusion of meat products.

The author, moreover, is of the opinion that such diseases as colitis, asthma, gout, rheumatism, bronchitis, and stomach disorders are either aggravated or due largely to excessive fermentation of starches and sugars contained in vegetables and fruits, cereals and breads. While many readers may take issue with such a contention, we must admit that he has presented his case in sincere and convincing fashion.

EMANUEL KRIMSKY.

Diagnosis Tables for the Otolaryngologist

LUFTWEGE, MUND UND OHR. Diagnostik in Tabellenform. By Dr. Alexander Cemach. Wien, Wilhelm Maudrich, [c. 1936]. 132 pages, illustrated. 8vo. Cloth, RM. 20.

An attractive volume of moderate size written in two sections. The first, consisting of 125 pages of text, concerns itself with a brief review of the anatomy of the ear, nose, throat and bronchial tree, and the technic of examination, including bronchoscopy. It is profusely illustrated with drawings in color and photographic reproductions. The second section consists of tables and charts. These are mostly photographic reproductions, many in color. Diseases of the mouth are given extensive consideration and many of the rare lesions are included from the diagnostic standpoint (angle). Differential diagnostic tables cover almost every known entity in oto-laryngology and rhinology. The volume is not a text book. Treatment has been purposely omitted. It was written primarily for the specialist and the advanced student of otolaryngology. The work is compact and practical, and should prove a valuable addition to the specialist's library.

HARRY MEYERSBURG.

BOOKS RECEIVED

Books received for review are acknowledged in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.

ALLERGY OF THE NOSE AND PARANASAL SINUSES. A Monograph on the Subject of Allergy as Related to Otolaryngology. By French K. Hansel, M.D. St. Louis, The C. V. Mosby Company, [c. 1936]. 820 pages, illustrated. 4to. Cloth, $10.00.

FROM A SURGEON'S JOURNAL, 1915-1918. By Harvey Cushing, M.D. Boston, Little, Brown and Company, [c. 1936]. 534 pages, illustrated. 8vo. Cloth, $5.00.

PHYSICAL THERAPY FOR NURSES. By Richard Kovács, M.D. Philadelphia, Lea & Febiger; [c. 1936]. 286 pages, illustrated. 8vo. Cloth, $2.75.

CLINICAL HEART DISEASE. By Samuel A. Levine, M.D. Philadelphia, W. B. Saunders Company, [c. 1936]. 445 pages, illustrated. 8vo. Cloth, $5.50.

CARDIOVASCULAR DISEASE. A New Aspect of Cause and Treatment. By J. H. Schrup, M.D. Dubuque, Iowa, J. H. Schrup, M.D., [c. 1936]. 20 pages. 12 mo. Paper, 12 cents.

PARENTERAL THERAPY. A Ready Reference Manual of Extra-Oral Medication for Physicians, Dentists, Pharmacists, Chemists, Biologists, Nurses, Medical Students and Veterinarians. By Walter F. Dutton, M.D. and George B. Lake, M.D. Springfield, Charles C. Thomas, [c. 1936]. 386 pages, illustrated. 4to. Cloth, $7.50.

PASSIVE VASCULAR EXERCISES AND THE CONSERVATIVE MANAGEMENT OF OBLITERATIVE ARTERIAL DISEASES OF THE EXTREMITIES. By Louis G. Herrmann, M.D. Philadelphia, J. B. Lippincott Company, [c. 1936]. 288 pages, illustrated. 8vo. Cloth, $4.00.

THE TECHNIQUE OF CONTRACEPTION. By Eric M. Matsner, M.D. Third edition. Baltimore, The Williams & Wilkins Company, [c. 1936]. 40 pages, illustrated. 8vo. Paper, $.50.

DISEASES OF THE RESPIRATORY TRACT. Eighth Annual Graduate Fortnight of the New York Academy of Medicine. Philadelphia, W. B. Saunders Company, [c. 1936]. 418 pages, illustrated. 8vo. Cloth, $5.50.

HYGIENE AND SANITATION. A Text-Book for Nurses. By George M. Price, M.D. Sixth edition, thoroughly revised. Philadelphia, Lea & Febiger, [c. 1936]. 295 pages. 8vo. Cloth, $6.00.

THE INTERNATIONAL MEDICAL ANNUAL. A Year Book of Treatment and Practitioner's Index. Edited by H. Letheby Tidy, M.D. and A. Rendle Short, M.D. Baltimore, William Wood and Company, [c. 1936]. 555 pages, illustrated. 8vo. Cloth, $6.00.

THERAPEUTIC USES OF INFRA-RED RAYS with a chapter on The Treatment of Sinusitis by Radiotherapy. By W. Annandale Troup, M.D. Third edition. London, The Actinic Press, Ltd., [c. 1936]. 149 pages, illustrated. 8vo. Cloth, 10/6.

COLLECTED WRITINGS ALFRED F. HESS. In two volumes. Springfield, Charles C. Thomas, [c. 1936]. 40to, illustrated. Cloth, volumes 1 and 2, $15.00.

PROTAMINE INSULINATE

—Continued from page 235

disorganized by slight overdosage or underdosage of insulin; wide fluctuations in blood sugar occur in these patients. The solution of this problem seems to lie in devising either a new method of administration or a new form of insulin which, when injected, would more nearly approximate the natural continuous secretion of this substance. A number of attempts have been made to solve this problem, none entirely successful. Important progress in this direction has now been made by Hagedorn and his collaborators at the Steno Memorial Hospital in Copenhagen; their communication and a confirmatory article by Root and his associates of Boston appear elsewhere in this issue. The Danish investigators have combined insulin with protamines (elementary compounds of amino acids containing one or more of the substances lysine, arginine and histidine). These new insulin compounds have an iso-electric point (p_H of minimum solubility) approaching the p_H of body tissues. Injected protamine insulinate, being relatively insoluble, tends to be absorbed slowly and over a relatively longer time than ordinary insulin; the blood sugar lowering effect lasts about twice as long. Patients with severe diabetes have been enabled to avoid to a large extent the marked fluctuations in blood sugar and hence the insulin reactions that sometimes characterize treatment with insulin alone.

Protamine insulinate (insulin retard) opens the door for fresh studies in the treatment of diabetes. With it the blood sugar can be kept more nearly normal and any advantages that can occur from this fact ought to show within a few years. Already it is known that the diabetic patient who is carefully treated is the one who lives longest and is most free from complications. Can the diabetic patient with blood sugar controlled throughout the twenty-four hours do better still? The new insulin in its present form demands more intelligence in its use, it works too slowly for coma and too slowly to overcome the hyperglycemia of a large meal, and it has the disadvantage of not being stable for more than a few weeks. When properly employed it will replace the customary high fasting blood sugar of the diabetic patient with a normal blood sugar. Perhaps the wise patient with diabetes will employ the quickly acting old insulin in the morning with a heavy breakfast and the slowly acting new insulin at night before a light dinner, as Dr. Hagedorn's patients have done.

This undoubtedly represents an important advance in the treatment of diabetes: it should be emphasized, however, that protamine insulinate is still a laboratory preparation and is not yet commercially available in this country. The compound must be prepared shortly before use, as it is stable at most for only a few weeks. It does not supplant ordinary insulin but serves as an adjunct to the latter; the two must usually be used in the same patient at different times of the day. Hagedorn and his associates point out that protamine insulinate is of no special value in those patients who are now adequately treated with insulin. But for those patients whose diabetes cannot be controlled satisfactorily with insulin alone, protamine insulinate is a valuable contribution—indeed the most valuable since the original discovery of insuln by the Toronto group.—*Jour. A. M. A.*, Jan. 18, 1936.

●

OLD TRAILS

—Continued from page 256

These men possess an especial significance in that they definitely foreshadowed the revolution that another group was to initiate in the sixteenth century. Seelig characterizes them as actors in a pre-renaissance drama. They spoke the prologue before the rising of the curtain upon a new and more glorious scene. They were the final links, as the Middle Ages drew to a close, in the golden chain that led on unerringly to the triumphs that were to eventuate in what we know as modern medicine.

To be continued